List of Symbols

Symbol		page
$\square$	Tensor product	1
sup	supremum	2
inf	infimum	2
$E_{\square}^{\Delta}$	Banach Lattices	2
L^1	Lebesgue Space	9
max	maximum	11
L^2	Helbert Space	12
NAT	Natural Transformation	17
HOM	Homomerphisim	17
DF	Dual Functor	17
Lq	Dual Lebesgue Space	20
INT^q	q-integral	20
L_∞	Essential Lebesgue Space	21
Lp	Lebesgue Space	27
H^∞	Essential Helbert Space	33
Re	Real	39
supp	Support	47
$\square$	Orthogonal decomposition	61
proj	projection	61
dim	dimension	63
min	minimum	110
const	constant	111
Sp	Space	114
ess	essential	115
Lip	Lipschitz	128
UMD	Unconditionality Martingale Differences	148
OUMD	Operator space for Unconditionality Martingale Differences	149
Op	Operator	158
QWEP	Quotient of Weak Expectation Property	166
Bil	bilinear	196
Var	Variation	201
Ker	Kernel	229

References

[1]Fremlin . D. H. :Tensor Products of Banach Lattices. Math. Ann.2 11, 87--106 (1974).

[2]Levin,V. L.: Tensor products and functors in categories of Banach spaces defined by KB-lineals. Trans. Moscow Math. Soc. 20, 41--77 (1969)

[3]Wittslock, G.: Ordered normed tensor products. Lecture Notes in Physics 25, 67---84. Berlin-Heidelberg-New York: Springer 1974

[4]Chancy, J. : Banach lattices of compact maps. Math. Z. 129, 1--19 (1972)

[5]Popa, N. : Sur la proprieted'approximation et les applications nucleaires. Rev. Roum. Math. Pures et Appl. 14, 1311--1322 (1969)

[6]Fremlin, D.H.: Tensor products of Archimedean vector lattices. AmericanJ. Math. 94, 777--798 (1972)

[7]Fremlin, D. H.: Topological Riesz spaces and measure theory. Cambridge University Press 1974

[8] Jameson, G. J. O.: Ordered linear spaces. Berlin-Heidelberg-New York: Springer, 1970

[9]Sehaefer, H.H.: Normed tensor products of Banach lattices. Israel J. Math. 13, 400--414 (1972)

[10] Schaefer, H.H.: Topological vector spaces. Berlin-Heidelberg-New York: Springer, 1971

[11] Grothendieck, A.: Produitstensorielstopdogiques et espacesnucleaires. Mem. American Math. Soc. 16 (1955)

[12]Fremlin, D.H.: On the completion of locally solid vector lattices. Pacific J. Math. 43, 341--347 (1972)

[13]Joan Wick Pelletier:TensornormsandoperatorsinthecategoryofBanachspaces.Integral Equations and Operator Theory, Vol.5 (1982).

[14]Johnson, G.E. : Book review of Banach modules and functors on categories of Banach spaces by Cigler, Losert, and Michor. Bull. A.M.S. (New Series) 3 (1980). 885-886 .

[15]Herz, C., and Pelletier, J. Wick.: Dual functors and integral operators in the category of Banach spaces. J. Pure and Applied Alg. 8 (1976). 5-22.

[16]Grothendieck, A.: Resume de la theoriemetrique des produitstensorielstopologiques. Boletin da Sociedade de Mathematica de Sao-Paulo 8 (1956). 1-79

[17]Saphar, P.: Produitstensorielsd'espaces de Banach et . classes d'applicationslineaireso.Studia Math. 38 (1970). 71-I00.

[18]Lindenstrauss, J., and Pelczynski, A.: Absolutely summing operators in L_p -spaces and applications. Studia Math. 29 (1968). 275-326.

[19]Persson, A., and Pietsch, A.: p-nukleare und p- integraleAbbildungen in Banachraumen. Studia Math. 33 (1969). 19-62.

[20]Pietsch, A.: QuasinukleareAbbildungen in normiertenRaumen. Math. Ann. 165 (1966). 76-90.

[21]Pietsch, A.: Absolute p-summierendeAbbildungen in normiertenRaumen.Studia Math. 28 (1967). 333-353.

[22]Stegall, C.: Characterizations of Banach spaces whoseduals are L^1spaces. Israel J. Math.11 (1972).299-308.

[23]Michor, P.: Functors and Categories of Banach Spaces. Lecture Notes in Mathematics 651, Springer-Verlag (1978).

[24]Amemiya, I., and Shiga, K.: On tensor products of Banach spaces. Kodai Mathematical Seminar Reports 9 (1957). 161-178.]

[25]Kwapien, S.: On operators factorizable through L_p space. Bull. Soc. Math. France, Memoire 31-32 (1972).215-225.

[26]Lewis, D.R.: Duals of tensor products. Proc. Pelczynski conference on Banach spaces of analytic functions (Kent, Ohio 1976). Lecture Notes in Mathe- matics 604, Springer-Verlag (1977).

[27]Gilbert, J.E., and Leih, T.J.: Factorization, tensor products, and bilinear forms in Banach space theory. Preprint.

[28]Cohen, J.S.: Absolutely p-summing, p-nuclear operators, and their conjugates. Math. Ann. 201 (1973). 177-200.

[39]Pelletier, J. Wick.: Dual functors and the Radon- Nikodym property in the category of Banach spaces. J. Australian Math. Soc., (Series A) 27 (1979). 479-494.

[30]Mityagin, B.S., and Svarc, A.S.: Functors in categories of Banach spaces. Russian Math. Surveys 19, No. 2 (1964). 65-127.

[31]Diestel, J., and Uh1, J.J. Jr.: The Radon-NikodymTheorem for Banach space valued measures. Rocky Mountain J. Math. 6 (1976). 1-46.

[32]Grothendieck, A.: Unecaracterisationvectorielle- metrique des espacesL^1. Can. J. Math. 7 (1955). 552- 561.

[33] David Perez-Garcia,IgnacioVillanueva:Orthogonally additive polynomials on spacese of continuous functions. J.Math.Anal.306(2005) 97-105.

[34]L.Drewnowski,W.Orlicz,Continuity and representation of orthogonally additive functional,Bull.Acad.Polon. Sci.Ser.Sci.Math.Astronom.Phys.17(1969)647-653.

[35]N.Friedman,M.Katz,Additivefunctional of L_p spaces,Canad.J.Math. 18(1966)1264-1271.

[36]N.Friedman,M.Katz,A representation theorem for a dditivefunctional,Arch. Rational Mech.Anal.21(1966)49-57.

[37]K.Sundaresam,Geometry of spaces of polynomials on Banach Lattices,in :Applied Geometry and Discrete Mathematics, in :DIMACS Ser. Discrete Math. Theoret. Comput.Sci.,vol.4.Amer.Math.Soc.,Providence,RI,1991,PP.571-586.

[38]J.Diestel,J.J.Uhl,Vectoer Measures,Math.Surveys,vol.15,Amer.Math.Soc.,Providence ,RI,1977.

[49]F.Bombal,I. Villanueva,Multilinear operators on spaces of continuous functions,Funct. Approx. Comment.Math.26(1998)117-126.

[40]S. Dineen, Complex Analysis on Infinite Dimensional Spaces, Springer-Verlag,Berlin,1999.

[41]R.M. Aron, B.J. Cole,T.W.Gamelin, Spectra of algebras of analytic functions on a Banach space ,J.ReineAngew.Math. 415(1991)51-93.

[42]I.Villanueva, Completely continuous multilinear operators on $C(K)$ spaces, Proc. Amer. Math.Soc.128(1999)793-801.

[43]I.Villanueva,Remarks on a theorem of Taskinen on spaces of continuous functions, Math.Nachr.250(2003)98-103.

[44] Y.Benyamini,S. Lasalle,J.G.Llavona, A representation theorem for orthogonally-additive polynomials on Banach lattices ,preprint.

[45]OMRAN KOURA,On the Interpolation of lnjective or Projective Tensor Products of Banach Spaces, JOURNAL OF FUNCTIONAL ANALYSIS 96. 38-61 (1991).

[46]G. PISIER. Factorization of operator valued analytic functions, $Adv:$. in Math., in press.

[47]A. PIETSTH, "Operator Ideals," V.E.B. Berlin and North-Holland, Amsterdam, 1978.

[48]G. PISIEK, "Factorization of Linear Operators and Geometry of Banach Spaces," C.B.M.S., No. 60, Second printing, Amer Math. Soc., Providence, RI, 1987.

[59]J. LINDENSTRAUSS AND L. TZAFRIRI, "Classical Banach Spaces I," Springer- Verlag, Berlin/New York, 1977.

[50]J. LINDENSTRAUSS AND L. TZAFKIRI, "Classical Banach Spaces II," Springer- Verlag, Berlin/New York, 1979.

[51]A. P. CALDERON, Intermediate spaces and interpolation, the complex method, Studia Math. 24 (1964), 113- 190.

[52]J. BERG AND J. LOFSTROM, "Interpolation Spaces, an Introduction," Grundlehren der matematischenWissenschaften, Vol. 29.3, Springer-Verlag, Berlin/New York, 1976.

[53]R. COIFMAN AND S. SEMMES, Interpolation of Banach spaces. Perron process and Yang Mills, preprint.

[54]R. COIFMAN, M. CWIKEL. R. ROCHBERG, Y. SAGHER, AND G. WEISS, "The Complex Method for Interpolation of Operators Acting on Families of Banach Spaces," Lecture Notes in Mathematics, Vol. 779, Springer-Verlag, New York/ Berlin, 1980.

[55]R. COIFMAN, M. CWIKEL, R. ROCHBERG, Y. SAGHER, AND G. WEISS, A theory of complex interpolation for families of Banach spaces. Advances in Math. 43 (1982), 203-229.

[56]H. HELSON, "Lectures on Invariant Subspaces," Academic Press, Orlando, FL. 1964.

[57]E. HERNANL)EZ. Intermediate spaces and the complex method of interpolation for families of Banach spaces, Ann. Scuola Norm. Sup. Pisa CI. Sci;. (4) 13, No. 2 (1986).

[58]S. KWAPIEN, Isomophic characterization of inner product spaces by orthogonal series with vector coefficients, Studia Math. 44 (1972), 583-595.

[59]G. PISIER, A remark on $\pi_2(l^p, l^p)$, Math. Nachr., in press.

[60]S. KAIJSER AND J. W. PELLETIER, "Interpolation Functors and Duality," Lecture Notes in Mathematics, Vol. 1208, Springer-Verlag, New York/Berlin, 1986.

[61]M. H. AIZENSHTEIN, Duality of the interpolation functions, in "Investigation on the Theory of Functions of Many Real Variables," Jaroslavl University (l986), 3-10. [Russian]

[62]M. H. AIZENSHTEIN AND Yu. A. BRUDNYI Computable interpolation functions, in "Investigation on the Theory of Functions of Many Real Variables," Jaroslavl University (1986), 11-35. [Russian].

[63]G. KOTHE, "Topological vector spaces II," Grundlehren der matematischenwissenschaften, Vol. 237, Springer-Verlag, Berlin/New York, 1979.

[64]B. MAUREY, Un theoreme de prolongement, C. R. Acad. Sci. Paris Ser. I. Muth. 279 (1974), 329--332.

[65]G. PISIER, Topics on Crothendieck's theorem, in "Proceedings of the International Conference on Operator Algebras, Ideals, and Their Applications in Theoretical Physics, TeulnerVerlagsgesellschaft, Leipzig, 1978," pp. 44-57.

[66]P. SAPHAR, Produitstensorielsd'espaces de Banach et classes d'applicationslineaires, Studia Math. 38 (1970), 71—100.

[67]M. ZAFRAN, Interpolation of multiplier spaces, Amer. J. Mafh. 105, No. 6 (1983), 1405-1416.

[68]N. TOMCZAK-JAEGERMANN, The moduli of smoothness and convexity and the Rademacher averages of the trace classes S_p, ($1 < p < z$), Studia Math. 50 (1974), 163-182.

[69]G. PISIER, Some applications of the complex interpolation method to Banach lattices, J. Analyse Math. 35 (1979), 264--281.

[70]D. J. H. GARLING ANU N. T~MCZAK JAEWXMANN, The cotype and uniform convexity of unitary ideals, Isrurl J. M&h. 45, Nos. 2-3 (1983), 175-197.

[71]P. K. LIN, B-convexity of the space of 2-suming operators. Israel J. Math. 37 (1980), 139- 150.

[72]0. BLASCO AND Q. XU, Interpolation between vector valued Hardy spaces, to appear.

[73]PenchoPetrushev and Yuan Xu,Localized Polynomial Frames on the Interval with Jacobi Weights,The Journal of Fourier Analysis and Applications Volume 11, Issue 5, 2005.

[74]Meyers, Y. (1990). Ondelletes et Opérateurs I: Ondelletes, Hermann, Paris.

[75]Frazier, M., Jawerth, B., and Weiss, G. (1991). Littlewood-Paley theory and the study of function spaces, CBMS 79, AMS.

[76]Narcowich, F.J., Petrushev, P., and Ward, J.D. (2004). Localized tight frames on spheres, preprint. (http://www.math.sc.edu/~pencho/).

[77]Szeg˝o, G. (1975). Orthogonal Polynomials, Amer. Math. Soc. Colloq. Publ. 23, Providence, 4th ed.

[78]Gasper, G. (1975). Formulas of the Dirichlet-Mehler type, Fractional calculus and its applications, (Proc. Internat. Conf., Univ. New Haven, West Haven, Conn., 1974), 207–215, Lecture Notes in Math. 457, Springer, Berlin.

[79]Andrews,G.E.,Askey,R.,andRoy,R.(1999).SpecialFunctions,EncyclopediaMath.Appl. 71,Cambridge University Press, Cambridge.

[80]Koornwinder, T. (1974). Jacobi polynomials, II. An analytic proof of the product formula, SIAM J. Math. Anal. 5, 125–137.

[81]Erdélyi, A., Magnus, W., Oberhettinger, F., and Tricomi, F.G. (1953). Higher Transcendental Functions, Vol. II, McGraw-Hill, New York.

[82]Szabados, J. and Vértesi, P. (1990). Interpolation of Functions, World Scientific, Singapore.

[83]PenchoPetrushev and Yuan Xu,Localized Polynomial Frames on the Ball, Constr. Approx. (2008) 27: 121–148.

[84] Y. M EYERS (1990): Ondelletes et Opérateurs I: Ondelletes. Paris: Hermann.

[85]M.FRAZIER,B.JAWERTH,G.WEISS(1991):Littlewood– PaleyTheoryandtheStudyofFunctionSpaces. CBMS, No. 79. Providence, RI: Amer. Math. Soc.

[86]YUAN XU (1999): Summability of Fourier orthogonal series for Jacobi weight on a ball in Rd. Trans. Amer. Math. Soc., 351:2439–2458.

[87] A. STROUD (1971): Approximation Calculation of Multiple Integrals. Englewood Cliffs, NJ: PrenticeHall.

[88]I. P. MYSOVSKIKH (1981): Interpolatory Cubature Formulas. In Russian. Moscow: Nauka.

[89] G. K YRIAZIS, P. PETRUSHEV,YUAN XU (to appear): Decomposition of weighted Triebel–Lizorkin and Besov spaces on the ball. Preprint. (http://www.math.sc.edu/~pencho/).

[90]F. NARCOWICH, P. PETRUSHEV, J. WARD (2006): Localized tight frames on spheres. SIAM J. Math. Anal., 38:347–692.

[91]F. NARCOWICH, J. WARD, P. PETRUSHEV (2006): Decomposition of Besov and Triebel–Lizorkin spaces on the sphere. J. Funct. Anal., 238:530–564.

[92]P. PETRUSHEV,YUAN XU (2005): Localized polynomial frames on the interval with Jacobi weights. J. Fourier Anal. Appl., 5:557–575.

[93] G.KYRIAZIS,P.PETRUSHEV,YUAN XU (toappear):JacobidecompositionofweightedTriebel–Lizorkin and Besov spaces. Preprint. (http://www.math.sc.edu/~pencho/)

[94] L. H¨ORMANDER (1968): The spectral function of an elliptic operator. Acta Math., 121:193–218.

[95] G. BROWN, F. DAI (2005): Approximation of smooth functions on compact two-point homogeneous spaces. J. Funct. Anal., 220(2):401–423.

[96]H.MHASKAR(2004):Polynomialoperatorsandlocalsmoothnessclassesontheunitinterval.J.Approx. Theory, 131:243–267.

[97]J.DZIUBA´NSKI(1997):Triebel–LizorkinspacesassociatedwithLaguerreandHerniteexpansions.Proc. Amer. Math. Soc., 125:3547–3554.

[98]YUAN XU (1998): Orthogonal polynomials and cubature formulae on spheres and on balls. SIAM J. Math. Anal., 29:779–793.

[99] L. BOS, N. LEVENBERG, S. WALDRON (2004): Metrics associated to multivariate polynomial inequalities. In: Advances in Constructive Approximation (Vanderbilt 2003), pp. 133–147. Brentwood, TN: Nashboro Press.

[100] H. MHASKAR, F. NARCOWICH, J. WARD (2001): Spherical Marcinkiewicz–Zygmund inequalities and positive quadrature. Math. Comp., 70:1113–1130.

[101]H. MHASKAR, F. NARCOWICH, J. WARD (2001): Corrigendum to "Spherical Marcinkiewicz– Zygmund inequalities and positive quadrature". Math. Comp., 71(#237):453–454.

[102] J. BORWEIN (1983): A note on Farkas' lemma. Utilitas Math., 24:235–241.

[103]C. F. DUNKL,YUAN XU (2001): Orthogonal Polynomials of Several Variables. Cambridge: Cambridge University Press.

[104]KamenIvanov · PenchoPetrushev · Yuan Xu,Sub-exponentially localized kernels and frames induced by orthogonal expansions,Math. Z. (2010) 264:361–397.

[105]Petrushev, P., Xu, Y.: Localized polynomial frames on the ball. Constr. Approx. 27, 121–148 (2008).

[106]arcowich, F.J., Petrushev, P., Ward, J.D.: Localized tight frames on spheres. SIAM J. Math. Anal. 38, 574–594 (2006).

[107]Narcowich, F.J., Petrushev, P., Ward, J.D.: Decomposition of Besov and Triebel–Lizorkin spaces on the sphere. J. Funct. Anal. 238, 530–564 (2006).

[108]Petrushev, P., Xu, Y.: Localized polynomial frames on the interval with Jacobi weights. J. Fourier Anal. Appl. 11, 557–575 (2005).

[109]ziuban´ski, J.: Triebel–Lizorkin spaces associated with Laguerre and Hermite expansions. Proc. Am. Math. Soc. 125, 3547–3554 (1997).

[110]Epperson, J.: Hermite and Laguerre wave packet expansions. Studia Math. 126, 199–217 (1997).

[111]Kerkyacharian,G.,Petrushev,P.,Picard,D.,Xu,Y.:DecompositionofTriebel–LizorkinandBesovspaces in the context of Laguerre expansions. J. Funct. Anal. (to appear). (arXiv:0804.4648v1).

[112]Petrushev,P.,Xu,Y.:DecompositionofspacesofdistributionsinducedbyHermiteexpansion.J.Fourier Anal. Appl. 14, 372–414 (2008).

[113]Kyriazis, G., Petrushev, P., Xu, Y.: Jacobi decomposition of weighted Triebel–Lizorkin and Besov spaces. Studia Math. 186, 161–202 (2008).

[114]Dziuban´ski,J.,Hernándedez,E.:Band-limitedwaveletswithsubexponentialdecay.Can.Math.Bull.41, 398–403 (1998).

[115]Ivanov, K., Totik, V.: Fast decreasing polynomials. Constr. Approx. 6, 1–20 (1990).

[116]Hörmander, L.: The analysis of linear partial differential operators I. Springer, Berlin (1983).

[117]Erdelyi, T., Magnus, A., Nevai, P.: Generalized Jacobi weights, Christoffel functions, and Jacobi polynomials. SIAM J. Math. Anal. 25, 602–614 (1994).

[118] Stein, E., Weiss, G.: Fourier analysis on Euclidean spaces. Princeton University Press, Princeton (1971).

[119]Xu, Y.: Summability of Fourier orthogonal series for Jacobi weight on a ball in Rd. Trans. Am. Math. Soc. 351, 2439–2458 (1999).

[120]Xu, Y.: Summability of Fourier orthogonal series for Jacobi weight on the simplex in Rd. Proc. Am. Math. Soc. 126, 3027–3036 (1998).

[121]Thangavelu, S.: Lectures on Hermite and Laguerre expansions. Princeton University Press, Princeton (1993).

[122]. Krasikov, I.: Inequalities for orthonormal Laguerre polynomials. J. Approx. Theory 144, 1–26 (2007).

[123]KamenIvanov, PenchoPetrushev, Yuan Xu, Decomposition of spaces of distributions induced by tensor product bases, Journal of Functional Analysis 263 (2012) 1147–1197.

[124] G. Kyriazis, P. Petrushev, Yuan Xu, Decomposition of weighted Triebel–Lizorkin and Besov spaces on the ball, Proc. London Math. Soc. 97 (2008) 477–513.

[125] J. Peetre, New Thoughts on Besov Spaces, Duke Univ. Math. Ser., Mathematics Department, Duke University, Durham, NC, 1976.

[126] H. Triebel, Theory of Function Spaces, Monogr. Math., vol. 78, BirkhäuserVerlag, Basel, 1983.

[127] K. Ivanov, P. Petrushev, Yuan Xu, Sub-exponentially localized kernels and frames induced by orthogonal expansions, Math. Z. 264 (2010) 361–397.

[128] G. Kyriazis, P. Petrushev, Yuan Xu, Jacobi decomposition of weighted Triebel–Lizorkin and Besov spaces, Studia Math. 186 (2008) 161–202.

[129] F.J. Narcowich, P. Petrushev, J.D. Ward, Decomposition of Besov and Triebel–Lizorkin spaces on the sphere, J. Funct. Anal. 238 (2006) 530–564.

[130] P. Petrushev, Yuan Xu, Decomposition of spaces of distributions induced by Hermite expansion, J. Fourier Anal. Appl. 14 (2008) 372–414.

[131] . Kerkyacharian, P. Petrushev, D. Picard, Yuan Xu, Decomposition of Triebel–Lizorkin and Besov spaces in the context of Laguerre expansions, J. Funct. Anal. 256 (2009) 1137–1188.

[132] M. Frazier, B. Jawerth, Decomposition of Besov spaces, Indiana Univ. Math. J. 34 (1985) 777–799.

[133] M. Frazier, B. Jawerth, A discrete transform and decompositions of distribution, J. Funct. Anal. 93 (1990) 34–170.

[134] M. Frazier, B. Jawerth, G. Weiss, Littlewood–Paley Theory and the Study of Function Spaces, CBMS Reg. Conf. Ser. Math., vol. 79, Amer. Math. Soc., 1991.

[135] P. Petrushev, Yuan Xu, Localized polynomial frames on the interval with Jacobi weights, J. Fourier Anal. Appl. 11 (2005) 557–575.

[136] L. Hörmander, The Analysis of Linear Partial Differential Operators I, Springer-Verlag, 1983.

[137] T. Erdelyi, A. Magnus, P. Nevai, Generalized Jacobi weights, Christoffel functions, and Jacobi polynomials, SIAM J. Math. Anal. 25 (1994) 602–614.

[138] Z. Ditzian, V. Totik, Moduli of Smoothness, Springer-Verlag, New York, 1987.

[139] J. Riordan, Combinatorial Identities, John Wiley, New York, 1968.

[140]E.Stein,HarmonicAnalysis:Real-VariableMethods,Orthogonality,and Oscillatory Integrals, Princeton University Press, Princeton, NJ, 1993.

[141] R. Coifman, G. Weiss, Analyseharmonique non-commutative surcertainsespaceshomogènes, Lecture Notes in Math., vol. 242, Springer, Berlin, 1971.

[142] C.L. Frenzen, R. Wong, A uniform asymptotic expansion of the Jacobi polynomials with error bounds, Canad. J. Math. 37 (1985) 979–1007.

[143] P. Nevai, Orthogonal polynomials, Mem. Amer. Math. Soc. 18 (1979).

[144] P. Petrushev, Yuan Xu, Localized polynomial frames on the ball, Constr. Approx. 27 (2008) 121–148.

[145] F. Dai, Yuan Xu, Cesàro means of orthogonal expansions in several variables, Constr. Approx. 29 (2009) 129–155.

[146]MAGDALENA MUSAT,On the Operator Space UMD Property for NoncommutativeL_p-space,Indiana University Mathematics Journal , Vol. 55, No. 6 (2006).

[147]AgeometricconditionthatimpliestheexistenceofcertainsingularintegralsofBanach-spacevalued functions, Proc. Conference on Harmonic Analysis in Honor of AntoniZygmund, Vol. I, II, Chicago, III., 1981, Wad worth Math. Ser., Wadsworth, Belmont, CA, 1983, pp. 270–286. MR 730072 (85i:42020).

[148]JEAN BOURGAIN, Some remarks on Banach spaces in which martingale difference sequences are unconditional, Ark. Mat.21 (1983), 163–168, http://dx.doi.org/10.1007/BF02384306. MR 727340 (85a:46011).

[149]BERNARD MAUREY,Syst`eme de Haar, Proc. S´eminaireMaurey-Schwartz 1974–1975: EspacesLp, applications radonifiantes et g´eom´etrie des espaces de Banach, Exp. Nos. I et II, Centre Math., ´EcolePolytech.,Paris,1975,p.26pp.(erratum,p.1). MR0420839(54#8851)(French).

[150]DONALD L. BURKHOLDER, Martingale transforms, Ann. Math. Statist. 37 (1966), 1494– 1504. MR 0208647 (34 #8456).

[151]J.A. GUTI´ERREZ,OntheboundednessoftheBanachspace-valuedHilbert transform, Dissertation, University of Texas, Austin, 1982.

[152]Vector-valued singular integrals and the H1-BMO duality, Proc. Probability Theory and Harmonic Analysis, Cleveland, Ohio, 1983, Monogr. Textbooks Pure Appl. Math., vol. 98, Dekker, New York, 1986, pp. 1–19. MR 830227 (87j:42049b).

[153]EARL BERKSON, THOMAS ALASTAIR GILLESPIE, andPAUL S. MUHLY, Abstract spectral decompositionsguaranteed by the Hilbert transform, Proc. London Math. Soc. (3)53 (1986), 489– 517. MR 868456 (88e:47036).

[154]Martingales and Fourier analysis in Banach spaces, Proc. Probability and Analysis, Varenna, 1985, Lecture Notes in Math., vol. 1206, Springer, Berlin, 1986, pp. 61–108. MR 864712 (88c:42017).

[155]Martingales and singular integrals in Banach spaces, Handbook of the Geometry of Banach Spaces, Vol. I (W. B. Johnson and J. Lindenstrauss, eds.), North-Holland, Amsterdam, 2001, pp. 233– 269. MR 1863694 (2003b:46009).

[156], Non-commutative vector valued L_p-spaces and completely p-summing maps, Ast´erisque 247 (1998), vi+131. MR 1648908 (2000a:46108) (English, with English and French summaries).

[157]Fubini's theorem for ultraproducts of noncommmutativeL_p-spaces, Canad. J. Math. 56 (2004), 983–1021. MR 2085631 (2005j:46040).

[158]MARIUS JUNGE and QUANHUA XU,Noncommutative Burkholder/Rosenthal inequalities, Ann. Probab. 31 (2003), 948–995. MR 1964955 (2004f:46078).

[159]Non-commutative Burkholder/Rosenthal inequalities: Applications (in preparation).

[160]The optimal orders of growth of the best constants in some non-commutative martingale inequalities (2001) (preprint).

[161]NARCISSE RANDRIANANTOANINA, Non-commutative martingale transforms, J. Funct. Anal. 194 (2002), 181–212, http://dx.doi.org/10.1006/jfan.2002.3952. MR 1929141 (2003m:46098).

[162] A weak type inequality for non-commutative martingales and applications, Proc. London Math. Soc. (3) 91 (2005), 509–542,http://dx.doi.org/10.1112/S0024611505015297. MR 2167096.

[163]MARIUS JUNGE and MAGDALENA MUSAT, A noncommutative version of the John-Nirenberg theorem, Trans. Amer. Math. Soc.359 (2007), 115–142.

[164] T. MEI,Operator-valued Hardy spaces (preprint).

[165]Interpolation between non-commutative BMO and non-commutative L_p-spaces, J. Funct. Anal.202(2003),195–225,http://dx.doi.org/10.1016/S0022-1236(03)00099-5. MR1994770 (2004g:46081).

[166]GILLES PISIER and QUANHUA XU, Non-commutative martingale inequalities, Comm. Math. Phys. 189 (1997), 667–698, http://dx.doi.org/10.1007/s002200050224. MR 1482934 (98m:46079).

[167]CHRISTOPHER LANCE,On nuclear C∗-algebras, J. Functional Analysis 12 (1973), 157–176, http://dx.doi.org/10.1016/0022-1236(73)90021-9. MR 0344901 (49 #9640).

[168]EBERHARD KIRCHBERG,Onnonsemisplit extensions, tensor products and exactness of group C∗algebras, Invent. Math. 112 (1993), 449–489, http://dx.doi.org/10.1007/BF01232444. MR 1218321 (94d:46058).

[169]Operator Spaces, London Mathematical Society Monographs. New Series, vol. 23, The ClarendonPressOxfordUniversity Press,NewYork, 2000,ISBN 0-19-853482-5. MR1793753 (2002a:46082).

[170]Introduction to Operator Space Theory, London Mathematical Society Lecture Note Series, vol. 294, Cambridge University Press, Cambridge, 2003, ISBN 0-521-81165-1. MR 2006539 (2004k:46097).

[171]ZHONG-JIN RUAN, Subspaces of C^*-algebras, J. Funct. Anal. 76 (1988), 217–230, ttp://dx.doi.org/10.1016/0022-1236(88)90057-2. MR 923053 (89h:46082)

[172]The operator Hilbert space OH, complex interpolation and tensor norms, Mem. Amer. Math. Soc. 122 (1996), viii+103. MR 1342022 (97a:46024).

[173]DAVID P. BLECHER and VERN I. PAULSEN, Tensor products of operator spaces, J. Funct. Anal. 99 (1991), 262–292, http://dx.doi.org/10.1016/0022-1236(91)90042-4. MR 1121615 (93d:46095).

[174]EDWARD G. EFFROS and ZHONG-JIN RUAN, Self-duality for the Haagerup tensor product and Hilbert space factorizations, J. Funct. Anal.100 (1991), 257–284, http://dx.doi.org/10.1016/0022-1236(91)90111-H. MR 1125226 (93f:46090).

[175]MAGDALENA MUSAT, On the operator space UMD property and noncommutative martingale inequalities, Ph.D. Thesis, 2002, www.msci.memphis.edu/~mmusat.

[176]Factorization of operator valued analytic functions, Adv. Math.93 (1992), 61–125, http://dx.doi.org/10.1016/0001-8708(92)90025-G. MR 1160843 (93g:46075).

[177]MARIUS JUNGE and ZHONG-JIN RUAN, Approximation properties for noncommutative L^p-spaces associated with discrete groups, Duke Math. J.117 (2003), 313–341, http://dx.doi.org/10.1215/S0012-7094-03-11724-X. MR 1971296 (2004b:46023).

[178]ALAIN CONNES,Classification of injective factors. Cases$II_1,II_\infty,III_\lambda,\lambda \neq 1$, Ann. of Math. (2) 104 (1976), 73–115, http://dx.doi.org/10.2307/1971057. MR 0454659 (56 #12908).

[179] ANNEMARIETORPE,NotesonnuclearC^*--algebrasandinjectivevonNeumannalgebras,Odense Univ., 1981.

[180]Mapping spaces and liftings for operator spaces, Proc. London Math. Soc. (3) 69 (1994), 171–197. MR 1272425 (96c:46074a).

[181] The Grothendieck-Pietsch and Dvoretzky-Rogers theorems for operator spaces, J. Funct. Anal. 122 (1994), 428–450, http://dx.doi.org/10.1006/jfan.1994.1075. MR 1276165 (96c:46074b).

[182]MASAMICHI TAKESAKI, Theory of Operator Algebras. I, Springer-Verlag, New York, 1979, ISBN 0-387-90391-7. MR 548728 (81e:46038).

[183]VERN I. PAULSEN,Completely Bounded Maps and Dilations, Pitman Research Notes in Mathematics Series, vol. 146, Longman Scientific & Technical, Harlow, 1986, ISBN 0-582-98896-9. MR 868472 (88h:46111).

[184]Sharp inequalities for martingales and stochastic integrals, Ast´erisque 157-158 (1988), 75–94, Colloque Paul L´evysur les ProcessusStochastiques (Palaiseau, 1987). MR 976214 (90b:60051).

[185]J¨ORAN BERGH and J¨ORGEN L¨OFSTR¨OM, Interpolation Spaces. An Introduction, SpringerVerlag, Berlin, 1976. MR 0482275 (58 #2349)

[186]SIMON WASSERMANN, On tensor products of certain group C^*-algebras, J. Functional Analysis 23 (1976), 239–254, http://dx.doi.org/10.1016/0022-1236(76)90050-1. MR 0425628 (54 #13582).

[187]THIERRYFACK and HIDEKI KOSAKI,Generalized s-numbers ofτ-measurable operators, Pacific J. Math. 123 (1986), 269–300. MR 840845 (87h:46122).

[188]PETER G. DODDS, THERESA K.-Y. DODDS, andBEN DE PAGTER, NoncommutativeBanach function spaces, Math. Z. 201 (1989), 583–597, http://dx.doi.org/10.1007/BF01215160. MR 1004176 (90j:46054).

[189] Fully symmetric operator spaces, Integral Equations Operator Theory 15 (1992), 942– 972, http://dx.doi.org/10.1007/BF01203122. MR 1188788 (94j:46062.

[190]Embeddingsofl_p intonon-commutativespaces,J.Aust.Math. Soc.74(2003),331–350. MR 1970053 (2004b:46091).

[191]QUANHUA XU, Applications du th´eor`eme de factorisation pour des fonctions `a valeursop´erateurs, Studia Math. 95 (1990), 273–292. MR 1060730 (91i:46077) (French, with English summary).

[192]QUANHUA XU, Interpolation of operator spaces, J. Funct. Anal. 139 (1996), 500–539, http://dx.doi.org/10.1006/jfan.1996.0094. MR 1402774 (97g:46075).

[193]Non-commutative Lp-spaces, Handbook of the Geometry of Banach Spaces, Vol. 2, North-Holland, Amsterdam, 2003, pp. 1459–1517. MR 1999201 (2004i:46095).

[194]STEFAN HEINRICH,Ultraproducts in Banach space theory, J. ReineAngew. Math. 313 (1980), 72–104. MR 552464 (82b:46013).

[195]MARIUS JUNGE and DAVID SHERMAN,NoncommutativeL_p modules, J. Operator Theory 53 (2005), 3–34. MR 2132686 (2006a:46077).

[196]GILLES PISIER, Un exempleconcernant la super-r´eflexivit´ e, Proc. S´eminaireMaurey-Schwartz 1974–1975: EspacesLp applications radonifiantes et g´eom´etrie des espaces de Banach, Annexe No. 2, Centre Math.´EcolePolytech., Paris, 1975, p. 12. MR 0410340 (53 #14090) (French).

[197]YanqiQiu,On the UMD constants for a class of iterated L_p (L_q) spaces,J. Funct. Anal.,Volume263,Issue 8,15 October 2012,pages 2409-2429.

[198]D.L. Burkholder, A geometrical characterization of Banach spaces in which martingale difference sequences are unconditional, Ann. Probab. 9 (6) (1981) 997–1011.

[199]Donald L. Burkholder, Martingales and singular integrals in Banach spaces, in: Handbook of the Geometry of Banach Spaces, vol. I, North-Holland, Amsterdam, 2001, pp. 233–269.

[200]D.J.H.Garling,OnmartingaleswithvaluesinacomplexBanachspace,Math.Proc.CambridgePhilos.Soc.104(2) (1988) 399–406.

[201]G. Pisier, Un exempleconcernant la super-réflexivité, in: SéminaireMaurey–Schwartz 1974–1975: EspacesLp applications radonifiantes et géométrie des espaces de Banach, Annexe No. 2, Centre Math. ÉcolePolytech., Paris, 1975, p. 12.

[202]J. Bourgain, Some remarks on Banach spaces in which martingale difference sequences are unconditional, Ark. Mat. 21 (2) (1983) 163–168.

[203]J.Bourgain,On martingales transforms infinite-dimensional lattices with an appendix on the K-convexity constant, Math. Nachr. 119 (1984) 41–53.

[204]José L. Rubio de Francia, Martingale and integral transforms of Banach space valued functions, in: Probability and Banach Spaces, Zaragoza, 1985, in: Lecture Notes in Math., vol. 1221, Springer, Berlin, 1986, pp. 195–222.

[205]J. Bourgain, Vector-valued singular integrals and the H^1-BMO duality, in: Probability Theory and Harmonic Analysis, Cleveland, OH, 1983, in: Monogr. Textbooks Pure Appl. Math., vol. 98, Dekker, New York, 1986, pp. 1–19.

[206]JoramLindenstrauss, LiorTzafriri, Classical Banach Spaces. II: Function Spaces, Ergeb. Math. Grenzgeb., vol. 97, Springer-Verlag, Berlin, 1979.

[207]D.L. Burkholder, A geometric condition that implies the existence of certain singular integrals of Banach-space valued functions, in: Conference on Harmonic Analysis in Honor of AntoniZygmund,vols.I,II,Chicago,IL,1981, in: Wadsworth Math. Ser., Wadsworth, Belmont, CA, 1983, pp. 270–286.

[208]Nicole Tomczak-Jaegermann, Banach–Mazur Distances and Finite-dimensional Operator Ideals, Pitman Monogr. Surveys Pure Appl. Math., vol. 38, Longman Scientific & Technical, Harlow, 1989.

[209]A.-P. Calderón, Intermediate spaces and interpolation, the complex method, Studia Math. 24 (1964) 113–190.

[210]D.J. Aldous, Unconditional bases and martingales in Lp(F), Math. Proc. Cambridge Philos. Soc. 85 (1) (1979) 117–123.

[211]Magdalena Musat, On the operator space UMD property for noncommutativeLp-spaces, Indiana Univ. Math. J. 55 (6) (2006) 1857–1891.

[212]YanqiQiu, On the OUMD property for the column Hilbert space C, Indiana Univ. Math. J., in press, http://www. iumj.indiana.edu/IUMJ/Preprints/4807.pdf.

[213] GERARDBUSKES and ARNOUD VAN ROOIJ, Bounded Variation and Tensor Products of Banach Lattices,Positivity 7: 47–59, 2003.

[214]Schatten, R.: A Theory of Cross-Spaces, Princeton University Press, Princeton, 1950.

[215]Fremlin, D.H.: Tensor products of Archimedean vector lattices, Am. J. Math. 94 (1972), 778– 798.

[216]Buskes, G. and van Rooij, A.: The bornological tensor product of two Riesz spaces, Ordered Algebraic Structures, edited by Jorge Martínez, 3-9 Kluwer Academic Publishers, 2002.

[217]Diestel, J. and Uhl, J.J. Jr.: Vector measures, in: Mathematical Surveys 15, American Mathematical Society, Providence, 1977.

[218]Aliprantis, C.D. and Burkinshaw, O.: Positive Operators, Orlando-New York-San DiegoLondon, 1985.

[219] Meyer-Nieberg, P.: Banach Lattices, Springer, Berlin-Heidelberg-New York, 1991.

[220] Schaefer, H.H.: Banach Lattices and Positive Operators, Springer, Berlin-Heidelberg-New York, 1974.

[221] Wong, Yau-Chuen: Schwartz Spaces, Nuclear Spaces and Tensor Products, Lecture Notes in Mathematics 726, Springer, Berlin-Heidelberg-New York, 1979.

[222] YOAV BENYAMINI, SILVIA LASSALLE AND JOS´E G. LLAVONA,Homogeneous Orthogonally Additive Polynomials on Banach lattices, Bull. London Math. Soc. 38 (2006) 459–469.

[223] J. Mujica, Complex analysis in Banach spaces, Math. Studies 120 (North-Holland, Amsterdam, 1986).

[224] J. Lindenstrauss and L. Tzafriri, Classical Banach spaces II (Springer, 1977).

[225] S. Lassalle and J. G. Llavona, 'Weak-polynomial convergence on spaces l_p and $L_{p'}$', Positivity 8 (2004) 283–296.

[226] R. Aron, C. Boyd, R. Ryan and I. Zalduendo, 'Zeros of polynomials on Banach spaces: The real story', Positivity 7 (2003) 285–295.

[227] R. Aron, R. Gonzaloand A. Zagorodnyuk, 'Zeros of real polynomials', Linear and multilinear algebra 48 (2000) 107–115.

[228] N. J. Kalton, N. T. Peck and J. W. Roberts, An F-space sampler (Cambridge University Press, 1984).

[229] I. P. Natanson, Theory of functions of a real variable, vol. II (Frederick Ungar Publishing Co., New York, 1960).

[230] A. Pelczy´nski, 'On weakly compact polynomial operators on B-spaces with Dunford-Pettis property', Bull. Acad. Polon. Sci. Ser. Sci. Math. Astronom. Phys. 11 (1963) 371–378.

[231] A. Pelczy´nski, 'A theorem of Dunford–Pettis type for polynomial operators', Bull. Acad. Polon. Sci. Ser. Sci. Math. Astronom. Phys. 11 (1963) 379–386.

[232] D. P´erez-Garc´ıa and I. Villanueva, 'Orthogonally additive polynomials on spaces of continuous functions', J. Math. Anal. Appl. 306 (2005) 97–105.

[233] L. Drewnowski and W. Orlicz, 'On representation of orthogonally additive functionals', Bull. Acad. Polon. Sci. Ser. Sci. Math. Astronom. Phys. 17 (1969) 167–173.

[234] N. Friedman and M. Katz, 'Additive functionals on Lp spaces', Canad. J. Math 18 (1966) 1264–1271.

[235] M. Marcus and V. J. Mizel, 'Representation theorems for nonlinear disjointly additive functionals and operators on Sobolev spaces', Trans. Amer. Math. Soc. 228 (1977) 1–45.

[236] V. J. Mizel and K. Sundaresan, 'Representation of vector valued nonlinear functions', Trans. Amer. Math. Soc. 159 (1971) 111–127.

[237] A. G. Pinsker, 'Sur unefonctionnelledansl'espace de Hilbert', Dokl. Acad. USSR (N.S.) 20 (1938) 411–414.

[238] W. Rudin, Functional analysis (McGraw-Hill, 1973).

[239] T. K. Carne, B. Cole and T. W. Gamelin, 'A uniform algebra of analytic functions on a Banach space', Trans. Amer. Math. Soc. 314 (1989) 639–659.

[240] M. I. Garrido, J. A. Jaramillo and J. G. Llavona, 'Polynomial topologies on a Banach space', Topology Appl. 153 (2005) 854–867.

[241]Qingying Bu, Gerard Buskes,Polynomials on Banach lattices and positive tensor products,J. Math. Anal. Appl. 388 (2012) 845–862.

[242] Y. Benyamini, S. Lassalle, J.G. Llavona, Homogeneous orthogonally additive polynomials on Banach lattices, Bull. Lond. Math. Soc. 38 (2006) 459–469.

[243]K. Sundaresan, Geometry of spaces of homogeneous polynomials on Banach lattices, in: Applied Geometry and Discrete Mathematics, in: DIMACS Ser. Discrete Math. Theoret. Comput. Sci., vol. 4, Amer. Math. Soc., Providence, RI, 1991, pp. 571–586.

[244]G. Buskes, A. Van Rooij, Squares of vector lattices, Rocky Mountain J. Math. 31 (2001) 45–56.

[245]K. Boulabiar, G. Buskes, Vector lattice powers: f-algebras and functional calculus, Comm. Algebra 34 (2006) 1435–1442.

[246]D.H. Fremlin, Tensor products of Archimedean vector lattices, Amer. J. Math. 94 (1972) 778–798.

[247]J. Lindenstrauss, L. Tzafriri, Classical Banach Spaces II—Function Spaces, Springer, 1979.

[248]J. Loane, Polynomials on vector lattices, PhD dissertation, National University of Ireland, Galway, 2007.

[249]P. Linares, Orthogonally additive polynomials and applications, PhD dissertation, University of Madrid, 2009.

[250]G. Buskes, A. van Rooij, Bounded variation and tensor products of Banach lattices, Positivity 7 (2003) 47–59.

[251]B.C. Grecu, R.A. Ryan, Polynomials on Banach spaces with unconditional bases, Proc. Amer. Math. Soc. 133 (2005) 1083–1091.

[252] A.R. Schep, Factorization of positive multilinear maps, Illinois J. Math. 28 (1984) 579–591.

[253]S. Dineen, Complex Analysis on Infinite Dimensional Spaces, Springer, 1999.

[254]C.D. Aliprantis, O. Burkinshaw, Positive Operators, Pure Appl. Math., vol. 119, Academic Press, Orlando, 1985.

[255]P. Meyer-Nieberg, Banach Lattices, Springer-Verlag, 1991.

[256]Y.A. Abramovich, A.W. Wickstead, When each continuous linear operator is regular II, Indag. Math. (N.S.) 8 (1997) 281–294.

[257]D.I. Cartwright, H.P. Lotz, Some characterizations of AM- and AL-spaces, Math. Z. 142 (1975) 97–103.

[258] Q. Bu, G. Buskes, A.G. Kusraev, Bilinear maps on products of vector lattices: A survey, in: Positivity, Trends in Mathematics, Birkhäuser, 2007, pp. 97– 126.

[259]K. Boulabiar, On products in lattice-ordered algebras, J. Aust. Math. Soc. 75 (2003) 23–40.

[260]A. Arias, J.D. Farmer, On the structure of tensor products of l_p-spaces, Pacific J. Math. 175 (1996) 13–37.

[261]A. Ibort, P. Linares, J.G. Llavona, A Representation Theorem for Orthogonally Additive Polynomials on Riesz Spaces, Rev. Mat. Complut., 2010.

[262]F.C. Sanchez, Complemented subspaces of spaces of multilinear forms and tensor products, J. Math. Anal. Appl. 254 (2001) 645–653.

[263]M.A. Toumi, Orthogonally additive polynomials on Dedekind σ-complete vector lattices, Math. Proc. R. Ir. Acad. Ser. A 110 (2010) 83–94.

[264]Krengel, U.: Remark on the modulus of compact operators. Bull. American Math. Soc. 72, 132--133 (1966).

[265]Peressini, A.L.: Ordered topological vector spaces. New York: Harper & Row 1967.

[266]Semadeni, Z.: Banach spaces of continuous functions. Polish Scientific Publishers, 1971.

[267] Gordon, Y., Lewis, D.R., and Retherford, J.R.: Banach ideals of operators with applications. J. Functional Analysis (1973). 85-129.

[268]MacLane, S.: Categories for the working mathematician. New York, Springer-Verlag 1971.

[269] YUAN XU (2005): Weighted approximation of functions on the unit sphere. Const. Approx., 21:1–28.

[270] DAVID J. ALDOUS, Unconditional bases and martingales in Lp(F), Math. Proc. Cambridge Philos. Soc. 85 (1979), 117–123. MR 510406 (80b:60009)

[271] JEAN BRETAGNOLLE, DIDIER DACUNHA-CASTELLE, andJEAN-LOUIS KRIVINE, Lois stables et espacesL_P, Ann. Inst. H. Poincar ´ e Sect. B (N.S.) 2 (1965/1966), 231–259. MR 0203757 (34 #3605) (French).

[272] DIDIER DACUNHA-CASTELLE and JEAN LOUIS KRIVINE, Applications des ultraproduits `a l'´etude des espaces et des alg`ebres de Banach, Studia Math. 41 (1972), 315–334. MR 0305035 (46 #4165) (French).

[[273] MARIUS JUNGE,Doob's inequality for non-commutative martingales, J. ReineAngew. Math. 549 (2002), 149–190. MR 1916654 (2003k:46097).

[274] RICHARD V. KADISON and JOHN R. RINGROSE, Fundamentals of the Theory of Operator Algebras. Vol. II, Pure and Applied Mathematics, vol. 100, Academic Press Inc., Orlando, FL, 1986, ISBN 0-12-393302-1. MR 859186 (88d:46106).

[275] TERRY R. MCCONNELL, On Fourier multiplier transformations of Banach-valued functions, Trans. Amer. Math. Soc. 285 (1984), 739–757. MR 752501 (87a:42033).

[276] EDWARD NELSON, Notes on non-commutative integration, J. Functional Analysis 15 (1974), 103–116, http://dx.doi.org/10.1016/0022-1236(74)90014-7. MR 0355628 (50 #8102).

[277] Exact operator spaces, Ast´erisque 232 (1995), 159–186, Recent advances in operator algebras (Orl´eans, 1992). MR 1372532 (97a:46023).

[278] MARIANNETERP,L^p-spaces associated with von Neumann algebras I and II, Copenhagen Univ., 1981.

[279] Prof.Dr.Shawgy Hussein Abd Allah and Batoul Ali Al balulah Mahmoud Ahmed with PHD, Polynomials on Banach Lattices and UMD constants with Decomposition of Spacese on tensor product, Sudan University of Science and Technology,2016.