Dedication

To who enlightening my path , to those who have right , offer Allah

My parent

To the one who bears with silence the hardship of my study with no much complaining , of the completion , of my scientific journey .

My wife

And to little beloved daughter , Tibyan

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Abstract

Generalized non linear Lorentz transformation is utilized to derive modified special relativistic space – time equations . The equations are found for particles moving in a potential field . The transformation is based on the usual Newtonian relation displacement in terms of initial velocity for constant acceleration . The displacement in all frames are expressed in terms of spatial coordinate time and potential per unit mass . The expressions for Lorentz transformation parameter , space and time reduces to that of ordinary special relativity in the absence of field . The energy relation reduces to special relativity for no field and to Newtonian one for law velocity .

Generalized special relativistic energy relations shows that velocity as well as field potential affect the energy . These relations were used to find vacuum energy by minimizing energy . The minimization shows that vacuum energy consists of photons having energy that can produce particle and anti particle pair . It also shows that the mass of antiparticle is negative , thus it repel ordinary particle . Another expression of vacuum energy shows that vacuum decays and transform may be to ordinary matter as proposed by scientists .

المستخلص

استُخدم تحويل لورنتز غير الخطي المعمم لاشتقاق معادلات الزمان – المكان النسبية الخاصة المعممة . المعادلات وجدت للجسيمات المتحركة في مجال الجهد . التحويل أسس على إزاحة العلاقة النيوتنية المعروفة في حدود السرعة الابتدائية للتسارع الثابت . عُبر عن الإزاحة في جميع الأطر في حدود محور فضاء الزمن والجهد لكل وحدة كتلة . التعبيرات لتحويل لورنتز المعروف , الفضاء والزمن يتحول إلى النسبية الخاصة العادية في غياب المجال . تتحول علاقة الطاقة إلى النسبية الخاصة بسبب عدم وجود المجال والسرعة المنخفضة النيوتنية .

توضح علاقات الطاقة النسبية الخاصة المعممة أن السرعة كوضع المجال تؤثر في الطاقة . هذه العلاقات استخدمت لإيجاد طاقة الفراغ بتخفيض الطاقة . التخفيض يوضح ان طاقة الفراغ تحتوي على فوتونات ذات طاقة تنتج جسيم وزوجه . كذلك توضح أن كتلة زوج الجسيم سالبة تتنافر مع الجسيم العادي . التعبير الآخر لطاقة الفراغ يوضح أن الفراغ يضمحل ومن الممكن أن يتحول إلى مادة كما اقترحه العلماء .

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