The Value of Sommerfeld's Finestructure Constant as a Consequence of the Planck-Aether Hypothesis

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A value of the finestructure constant at the unification energy is obtained by a dimensional analysis of quantum gravity and fluid dynamics. The derivation assumes that the vacuum is a superfluid made up of positive and negative Planck mass particles obeying an exactly nonrelativistic law of motion with Lorentz invariance a low energy approximation. The dimensional analysis presented gives a value for the finestructure constant in good agreement with the empirical value $1/\alpha \cong 25$.