

Abstract Submitted  
for the APR07 Meeting of  
The American Physical Society

**What is Fine-Structure Constant?** SHANTILAL GORADIA, Gravity Research Institute, Inc. — If each Planck time represents OPEN or CLOSE state of the mouth of the quantum wormholes per my proposal in APS MAR07 or physics/0210040 or [1], the total number of microstates in the Hubble time of the universe would be  $10^{60}$ . Its substitution for  $W$  in entropy equation  $S = k \text{Log}_e W$ , while dropping the Boltzmann constant of proportionality  $k$ , one in natural units, would make the increasing disorder rate proportional to  $\text{Log}_e 10^{60}$  or 138. This disorder rate is close to the reciprocal of fine-structure coupling constant  $\alpha$  (1/137), confirming my concept that the rate of increase of disorder in the universe at large is reciprocal of microscopic rate of decrease of disorder resulting from the ever increasing shrinkage of Planck length, discussed in DNP06, to make up for the increasing number of Planck lengths in the observable inflation. This would be consistent with the second law of thermodynamics that says that the entropy of an “isolated” system does not decrease. Therefore I am documenting my proposal:  $\alpha = 1/\text{Log}_e W$ , alternatively:  $S \times \alpha = k$ . [1] Goradia S. G., “*Why is Gravity so Weak?*” Journal of Nuclear Radiations and Physics, Volume 1, No 2 107-117 (2006).

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Date submitted: 15 Feb 2007

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