Geometrical Constraints in an N-dimensional Topology in Quantum Mechanics and Cosmology

ELIZABETH A. RAUSCHER[†] and MICHAEL T. HYSON[‡]

[†]Tecnic Research Laboratory,
3500 S. Tomahawk Rd., Bldg #188,
ApacheJunction, Arizona 85219,

[‡]Research Associate,
Center for Brain and Cognition UCSD
michaelhyson@yahoo.com

Abstract: Geometrical constraints in general relativity and quantum mechanics are formulated in a multidimensional Descartes space. A fundamental relationship between these correspondences and complementarity constraints directs us towards a new understanding of the fundamental relationship between relativity and quantum theory. The set of geometrical constraints of this n-dimensional topology are expressed in terms of a hyper-dimensional Minkowski metric, Mn for n > 4 which yields naturally closed cosmological solutions to Einstein's field equations which also yields compatibility between Einstein's field equations and the current big bang model without Guth's inflationary model and its possible 10100 solutions as related to string theory. A comprehensive group theoretical approach to the model of the Descartes space incorporates dark energy and dark matter which results from the model in a natural manner. A lemma is formulated for the relationship of the maximum invariance for an n-dimensional Descartes space and the dimensions of that space. Group multiplication tables for the Mn geometry are formulated for the Descartes 10 and 11 dimensional spaces.