

## Preface

The initial quest that led to this present thesis started some 60 years earlier, when Wong was an undergraduate assistant to Professor Nielsen of Duke University. There he was given a theoretical project to come up with the formation of the carbon 12 nucleus, which obviously is a Boson, but it also has a spherical void center based on a hard-sphere dense pack model. If nuclear matter can be assumed as a thermal ensemble of such bosons, then it can be described as in a Bose-Einstein ground state, similar to liquid Helium 4. It is well-known superfluid Helium has a roton spectrum, which can be explained by the effect of scattering. Lee-Yang-Huang proposed a simple way to treat this scattering problem, with a pseudo potential. This idea led Wong to study this problem as his doctoral thesis under Professor A.J.F. Siegert, a former student of Heisenberg. But because of the hard sphere Carbon 12 model, there is a need to prove the topology in a complete quantum way starting with space time mapping. In short to prove the forming of the Lorentz manifold as a result of elementary particles that fits the 8-fold way of Feynman. Due to McGlinn's Theorem, it is then necessary to extend the dimension beyond 4D, such that we can get to the result of  $SU(3) \times L$ . It is this mathematical problem Wong faced in 1963, and would like to express his most sincere thanks to his teacher, mathematician Professor H.C. Wang for teaching him the algebra of the Semi-Simple-Lie Groups, and its topological structures that links between the toroidal and spheres with homotopy that proved to be the critical missing link between topological mappings and the Gell-Mann standard model of that time. However, the final fixing of the Universe as the homogenous 5D was not yet in place until Perelman introduced his Ricci-Flow mappings in 1990. In the meantime, most other theoretical physicists were working furiously

on trying to amend the QED and QCD theory, via introducing extra Lagrangian multipliers, such as the String theories. But because QED is a 4D space-time theory. To us such approaches amount to fishing in the dark and seems arbitrary. Through some discussions over many coffee sessions, and the help from Professor Marvin Chester in launching a 5D theory Google website to attract others interested in the theory, Professors G. Dreschhoff and Högne Jungner joined Wong, and ‘The homogenous 5D based on Perelmann work into a unified field theory proposal for the creation of the Universe’ was forwarded some 15 years ago. A book titled “The Five Dimension Space-Time Universe: A creation and grand unified field theory model” was published by Scientific Research Publishing, USA in 2014. Since then, two more friends, Professors Fung and Chow joined the effort. Many more articles with rigorous mathematical foundation extensions were published, including solving for the first time the explicit form of the Maxwell’s magnetic monopoles. It is then clear why there must be a Bose-Einstein vacuum as suggested by Higgs, and all matters can be considered as thermal excitations from it. In fact, the theory works extremely well from astronomical objects, like stars and planets to the precise calculated mass for the proton and neutron, leading to revelation of a precise quark mass of 33 MeV. A first implication that a General Musical Code might exist in the 5D homogenous space-time manifold. Perhaps the most insightful is that the 4<sup>th</sup> space dimension within the 5D homogenous manifold is actually an entangled variable to the Fermat’s amplitude ‘r’, according to Euler Theorem on 5D manifold. One important consequence is that in the Fourier energy and momentum representation, the 4<sup>th</sup> momentum variable is completely imaginary. Such a result leads to the emergence of the Higgs bosons, with a primordial spectrum. Based on the crucial steps of deduction briefly outlined above, the current book is written. Wong would like to express his sincere thanks to Professor Dirk Meijer, who showed him that this primordial

spectrum in fact is orderly, and the hadron mass data obeys a General Musical Code. In fact, it was found that even an error bar of  $1/10,000$  in the calculated gluon potential would be too large and unacceptable to obtaining the observed proton, and neutron masses. Such a precise mathematical revelation finally links the creation from the elementary particles all the way to life forms. Perhaps this profound mathematical revelation even links to the hidden purpose of creation itself for human, as a primordial observer.