A Simple Mathematical Model for Standard Model of Elementary Particles and Extension Thereof. ASHOK SINHA[1], Gen.Edu.Econ.Techno.Assoc. (GEETA) — An algebraically (and geometrically) simple model representing the masses of the elementary particles in terms of the interaction (strong, weak, electromagnetic) constants is developed, including the Higgs bosons. The predicted Higgs boson mass is identical to that discovered by LHC experimental programs; while possibility of additional Higgs bosons (and their masses) is indicated. The model can be analyzed to explain and resolve many puzzles of particle physics and cosmology including the neutrino masses and mixing; origin of the proton mass and the mass-difference between the proton and the neutron; the big bang and cosmological Inflation; the Hubble expansion; etc. A novel interpretation of the model in terms of quaternion and rotation in the six-dimensional space of the elementary particle interaction-space – or, equivalently, in six-dimensional spacetime – is presented. Interrelations among particle masses are derived theoretically. A new approach for defining the interaction parameters leading to an elegant and symmetrical diagram is delineated. Generalization of the model to include supersymmetry is illustrated without recourse to complex mathematical formulation and free from any ambiguity.

[1]This Abstract represents some results of the Author's Independent Theoretical Research in Particle Physics, with possible connection to the Superstring Theory. However, only very elementary mathematics and physics is used in my presentation.

ASHOK SINHA
Gen.Edu.Econ.Techno.Assoc. (GEETA)