

Abstract Submitted
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**Fractal Rings and Composite Elementary Particles (FRACEP):
A Picture of Composite Standard Model Fundamental Particles** JUDITH
GIANNINI, Retired — The object of this work was to study the feasibility of identifying a minimum set of fundamental particles that could be used to build up composite fermions and bosons that exhibit the same properties and behavior as the Standard Model (SM) fundamental particles. The spontaneous decay of most of the SM fermions suggests the possibility that they are composite in nature. The results of this arithmetically-based conceptual model identify a minimum set of only two fundamental particles (with equal and opposite mass) that combine in fractal-like configurations to form Intermediate Building Blocks (IMB). The IMBs then combine to form all of the SM fundamental particles and their anti-counterparts. These composite (bright universe) particles agree with the SM particles in mass, spin, electric charge, decay products and maximum classical radius (indicated by the scattering cross-section). Further, FRACEP identifies an equal set of dark universe particles, based primarily on its negative fundamental particle, which could represent the dark matter and energy understood to be the cause of the expansion of our (bright) universe.

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