

## Graphical 3D modeling of molecules and nanostructures in sub-nanometer scale with the BSM-SG atomic models

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The basic structures of matter-supergravitation unified theory (BSM-SG) reveals non-spherical shapes of the stable elementary particles, composed of two types of helical structures with opposite twisting. Proton and neutron have one and the same toroidal sub-structure, but the shape of proton is a twisted torus like the figure 8, while the neutron is double folded. The shape of proton permits modulation of the space fabrics creating a positive E-field. At neutron, such modulation is locked in the near field, so it is not detectable, but when in motion it creates a magnetic field. Due to its near E-field, the neutron is stable over the proton, forming a deuteron. The electron is a different three body system with two intrinsic frequencies. Its structure and dynamic properties provide classical explanations of: Compton frequency, anomalous magnetic moment, spin and relativistic effect of mass increase. The near Coulomb field of the proton defines the trace of orbiting electron. The atomic nuclei are 3D compositions of protons and neutrons, kept by the attractive supergravitational forces, while balancing the repulsive forces between protons. The increase of number of protons reveals the build-up trend of the atomic nuclei showing a perfect match with the pattern of the periodic table. The features defining the valences and the angular restrictions of the chemical bonds are apparent. The rotational freedom of neutrons over protons is behind the nuclear magnetic moment. The BSM-SG atomic models are convenient for 3D graphical modeling of complex molecules and nanostructures with sub-nanometer resolution.

### Biography

Stoyan Sarg Sargoytchev obtained his Ph.D. in Physics from Bulgarian Academy of Sciences in 1984, while working on space research projects of program Intercosmos coordinated by former Soviet Union. From 1990, he was a visiting scientist at Cornell University. From 1992, he took positions of scientist at Canadian government institutions working on space and atmospheric research. His participation in diversified interdisciplinary projects inspired him to develop his theoretical work, Basic Structures of Matter-Supergravitation Unified Theory. After first publishing in 2001, he published articles, reports in conference proceedings, application developments and books by amazon.com.

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