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Developing the Polynomial Expressions for Fields in the ITER Tokamak STEPHEN SHARMA, University of California, Berkeley and University of Southern California — The two most important problems to be solved in the development of working nuclear fusion power plants are: sustained partial ignition and turbulence. These two phenomena are the subject of research and investigation through the development of analytic functions and computational models. Ansatz development through Gaussian wave-function approximations, dielectric quark models, field solutions using new elliptic functions, and better descriptions of the polynomials of the superconducting current loops are the critical theoretical developments that need to be improved. Euler-Lagrange equations of motion in addition to geodesic formulations generate the particle model which should correspond to the Dirac dispersive scattering coefficient calculations and the fluid plasma model. Feynman-Hellman formalism and Heaviside step functional forms are introduced to the fusion equations to produce simple expressions for the kinetic energy and loop currents. Conclusively, a polynomial description of the current loops, the Biot-Savart field, and the Lagrangian must be uncovered before there can be an adequate computational and iterative model of the thermonuclear plasma.

Stephen Sharma
University of California, Berkeley and University of Southern California

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