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Lia Leon Margolin* (lmargolin@mmm.edu), 221 East 81 Street, New York, NY 10021, and **Shalva Tsiklauri**. *Investigation of ground state energies and pair correlation functions for the system of three electrons confined in a parabolic well by the use of the hyperspherical function method.*

Theoretical study of the physical properties of quantum dots as a function of external magnetic field is a very important problem to solve since it allows us to tune physical properties of these dots by experimentally changing external magnetic field frequency. Theoretical studies of three electron quantum dots have been carried out for Coulomb interacting electrons. However, due to the fact that Poisson equation solution in 2D space for three electron quantum system is represented by the logarithmic potential, it is extremely important to describe electron-electron interactions with logarithmic potential. We developed model-independent approach for the description of three electron quantum dots in 2D space in the framework of Hyperspherical Function Method. In this article a system of three electrons confined by a parabolic well in the two-dimensional quantum dot and interacting via an effective logarithmic potential is investigated. Ground state energy levels as well as binding energies and pair correlation functions are obtained (Received January 16, 2008)