

Existence and uniqueness of ground states  
of semilinear elliptic equations involving the critical  
and super critical exponents in their nonlinearities

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In this talk, we consider the existence and uniqueness of radially symmetric positive solutions of the Kwong type semilinear elliptic equations with “small” additional power-type nonlinearities involving the critical and super critical exponents on the whole space, besides that, we impose the 0-Dirichlet boundary condition at infinity. Furthermore, we see that if the uniqueness of radially symmetric positive solutions is assured, then the solution minimizes the corresponding action functional, which means that the solution is the ground state.

This talk is based on a joint work with Kazuyuki Yagasaki (Kyoto University).