

# **Boundary Singularities in an Large-N limit of Quantum Mechanical Models with Global Symmetries**

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We endeavour to develop an algebro-geometric method for rigorous treatment of phase- transitional behaviour in finite-body quantum mechanical systems with global symmetry. Inspired and guided by discoveries and achievements in the most advanced theoretical constructions (SUSY Gauge Theories and String Theory), it was fortunately possible not only to identify and classify the pertinent singularities, but also to understand the physics of these singularities. We show that the collective rotations emerge as bifurcations from the zero-locus of certain invariant quantum bilinear form, whose symmetry gets enhanced at the singularity.