

Abstract Submitted  
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**A Classical and Quantum Two-Sphere Singularity** DEBORAH KONKOWSKI, U. S. Naval Academy, THOMAS HELLIWELL, Harvey Mudd College — The two-sphere singularity in the maximal extension of the Florides exact solution is analyzed. The classical structure shows inextendible null geodesics (complete timelike geodesics) along with curvature invariants that diverge as the two-sphere is approached. The spacetime of this classical timelike scalar curvature singularity is classified as to its Petrov and Segre types. Its energy conditions together with the strength of the singularity are analyzed to determine the physical relevance of the spacetime. Whether the singularity persists in a quantum sense is considered next. A review of the definition of quantum singularity is given in terms of the essential self-adjointness of the Klein-Gordon operator using Weyl's limit circle/limit point procedure. The singularity is then shown to remain robust and persist under a quantum wave probe.

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