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Quantum singularities in static and conformally static spacetimes
DEBORAH KONKOWSKI, U.S. Naval Academy, THOMAS HELLIWELL, Harvey Mudd College — The definition of quantum singularity is extended from static space-times to conformally static space-times. After the usual definitions of classical and quantum singularities are reviewed, examples of quantum singularities in static space-times are given. These include asymptotically power-law space-times, space-times with diverging higher-order differential invariants, and a space-time with a 2-sphere singularity. The theory behind quantum singularities in conformally static space-times is followed by several examples: a Friedmann-Robertson-Walker space-time with cosmic string, Roberts space-time, Fornav space-time, and the HMN metric. Future areas of research are discussed.

Deborah Konkowski
U.S. Naval Academy

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