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Almost commuting selfadjoint operators and quantum mechanics

We show that Mumford's Approximately Macroscopically Unique (AMU) states exist for quantum systems consisting of unbounded self-adjoint operators when the commutators are small. In particular, AMU states always exist in position and momentum systems when the Planck constant $|\hbar|$ is sufficiently small. However, we show that these standard quantum mechanical systems are far away from classical mechanical (commutative) systems even when $|\hbar| \rightarrow 0$.