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Singularity Resolution in Loop Quantum Gravity

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By now there are several examples in loop quantum gravity in which effects of quantum geometry became important, dominate the Planck regime and resolve classical singularities. The resulting quantum space-times are typically significantly larger than the original classical space-times. In simple examples, the physics of these quantum extensions has shed considerable light on issues such as the quantum nature of the big-bang and information loss puzzle. I will present a few examples to illustrate this growing area.