

# The Singularity Theorems in Low Regularity

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## ABSTRACT

*Classically the singularity theorems of General Relativity are proven for smooth, actually  $C^2$ -metrics. However, the physically most reasonable and at the same time conceptionally most natural regularity class for the statement of the Theorems is  $C^{1,1}$ , i.e., the first order derivatives of the metric being locally Lipschitz continuous. In this talk we present the recent proofs of both the Hawking and the Penrose singularity theorem in  $C^{1,1}$  ([3, 4]) based on regularisation techniques adapted to the causal structure of the spacetime ([1, 2]). Finally we provide an outlook to further lines of research in this area.*

## References

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