



entropy



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## Entropy in Covariant Quantum Gravity

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submissions:

**closed (31 December 2019)**

### Message from the Guest Editor

In this Special Issue progress will be reported in the theory of quantum gravity, with particular reference to its covariant and manifestly-covariant realizations, which may actually help achieve insight into the possible role of quantum entropy. In this context, the latter is expected to be identified, in analogy to CSM, with a suitable Boltzmann-Shannon statistical entropy associated with the relevant quantum probability density function (PDF) which is characteristic of theory. Thus, generally it should correspond to the occurrence of non-stationary (in some suitable sense) quantum states. Specifically, to this end, consideration will be given to recent developments of QG that concern the adoption of either covariant or manifestly-covariant canonical approaches for the quantization of the space-time metric tensor. In both cases, the quantum PDF and the same quantum entropy can (or must) always be prescribed in terms of suitable  $\mathbb{R}$ -scalars, with the second one being associated with an appropriate quantum expectation value of the same quantum PDF. For this purpose, review articles, as well as original research works, will be presented.



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Special Issue



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## Editor-in-Chief

### Prof. Dr. Kevin H. Knuth

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## Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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