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## Nonlocal quantum field theories

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It has been realized that nonlocality might be a key ingredient for the formulation of a quantum renormalizable theory of gravitation. In fact, nonlocal gravitational models are earning growing interest in the scientific community, since they are super-renormalizable or even finite at quantum level. In this seminar I will introduce nonlocal field theories and discuss their general features. In particular, I will discuss power counting renormalization and finiteness. Moreover, I will show how Cutkosky rules are generalized to the case of nonlocal theories, so that the perturbative unitarity is easily established. Finally, I will discuss the problem of causality in nonlocal theories.

### Summary

**Primary authors:** Dr BRISCESE, Fabio (SUSTech); Prof. MODESTO, Leonardo (SUSTech)

**Presenter:** Dr BRISCESE, Fabio (SUSTech)

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