## Phenomenology 2018 Symposium



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## A linked cluster expansion for the Functional Renormalization Group of the Legendre effective action

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A lattice version of the widely used Functional Renormalization Group (FRG) for the Legendre effective action is solved (exactly) in terms of a linked cluster expansion. The graph rules invoke only one-line irreducible graphs and a new type of labeled tree graphs. Conversely the FRG induces nonlinear flow equations governing suitable resummations of the graph expansion. The correspondence is tested on the critical line of the Luscher-Weisz solution of phi<sup>4</sup> theory. An extension to quantum field theories on curved spacetimes with flat spatial sections is feasible.

## Summary

Authors: Mr BANERJEE, Rudrajit (University of Pittsburgh); Dr NIEDERMAIER, Max (University of Pittsburgh)

Presenter: Mr BANERJEE, Rudrajit (University of Pittsburgh)

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