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## Two different types of series expansions valid at strong coupling

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It is well known that in QFT, perturbative series expansions in powers of the coupling constant yield an asymptotic series. At weak coupling, this is not an issue, since the series is valid at lower orders and one can use it to make reliable predictions. However, the series fails completely at strong coupling. I will show that one can develop two different types of series expansions that are absolutely convergent and are valid at both strong and weak coupling. The first series is the usual one, in powers of the coupling constant, but where we pay special attention to the order of two asymptotic limits. In the second series, we expand the quadratic/kinetic part but not the interaction part containing the coupling. This yields a series in inverse powers of the coupling. The first series converges quickly at weak coupling and slowly at strong coupling whereas it is the reverse for the second series. We apply this to a basic one-dimensional integral and also to a path integral in quantum mechanics both of which contain a quadratic term and a quartic interaction term containing the coupling.

### Mini Symposia (Invited Talks Only)

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