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Type: **Talk**

## **\*Leading Talk\* Leading logarithms for mesons and nucleons**

*Tuesday, June 30, 2015 4:20 PM (30 minutes)*

The talk will give an overview of the work done recently in calculating leading logarithms to high order and the underlying methods used. The method used [1,2] will be done and an over view of applications which have been done to very high order in the massless case and up to seven loops in the massive case [3,4,5]. The talk will concentrate mainly on the new aspects needed for the nucleon sector where we can also obtain subleading logarithms in some cases. We also present some numerical results [5].

### References

- [1] Leading Logarithms in the Massive  $O(N)$  Nonlinear Sigma Model, Johan Bijnens, Lisa Carloni, Nucl.Phys. B827 (2010) 237-255
- [2] Chiral Logarithms in the Massless Limit Tamed, N. Kivel, M.V. Polyakov, A. Vladimirov, Phys.Rev.Lett. 101 (2008) 262001
- [3] Leading logarithms in the anomalous sector of two-flavour QCD, Johan Bijnens, Karol Kampf, Stefan Lanz, Nucl.Phys. B860 (2012) 245-266
- [4] Leading logarithms in N-flavour mesonic Chiral Perturbation Theory, Johan Bijnens, Karol Kampf, Stefan Lanz, Nucl.Phys. B873 (2013) 137-164
- [5] Leading logarithms for the nucleon mass, Johan Bijnens, Alexey A. Vladimirov, Nucl.Phys. B891 (2015) 700-719

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