

# POISSON SIGMA MODEL ON THE DISK AND CYCLIC CHAINS

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## SCIENTIFIC REPORT

During my visit to Milan on November 22-23, 2007, I had intense discussions with Prof. Gregorio Falqui and other members of the Mathematics Department of the University of Milan Bicocca.

As planned, part of the discussions concerned the structures that may be induced on subcomplexes by the tool of perturbative quantum field theory in the BV formalism. The special case of the Poisson sigma model on the disk, which produces  $L_\infty$ -morphisms of modules (cyclic chains and differential forms) and associates a star product with trace to every unimodular Poisson structure, was discussed in details.

In addition we exchanged ideas on reduction of Poisson manifolds and higher structures (Courant algebroids, generalized complex structures,...) via graded manifolds extending the Marsden–Ratiu approach. Possible applications to infinite-dimensional integrable systems were also discussed.

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