

# Seminar

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U Aarhus

## Representations of the based loop space

Friday, May 15, 2015

at 16:00 h

ESI, Schrödinger Lecture Hall

**Abstract:** Let  $X$  be a connected manifold. It is well known that there is an equivalence of categories between the representations of the fundamental group of  $X$  and the flat vector bundles over  $X$ . The aim of the talk is to explain a higher version of this statement, where the fundamental group is replaced by the singular chains on the based loop space of  $X$ . Concatenation of loops equips the chains with a multiplication, called the Pontryagin product. The representations of the resulting algebraic structure turn out to be essentially equivalent to something comparably simple, namely the dg category of flat superconnections over  $X$ .

The talk is partly based on joint work with Camilo Arias Abad (Universidad Nacional de Colombia, Medellín).

Nils Carqueville

April 27, 2015