

# Seminar

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**Wednesday June 19, 2013  
10:00 a.m., HH-3017**

***Groupoids and relations among Reidemeister and among Nielsen numbers***

**Abstract:**

In this talk, I indicate how a careful analysis of certain 8 term exact sequences of Reidemeister sets and algebraic coincidences (or fixed point sets) can be used to unify generalized and extend Nielsen theory results in two different contexts. The sequences find their inspiration from the theory of fibrations of groupoids. This same theory also furnishes a proof of exactness.

In my chapter in the 2005 Handbook of Topological Fixed point theory these sequences were used to give a unified approach to Nielsen Fibre space theory. The chapter also hinted at a second application of these sequences, pointing out that after publication of the fixed point version of the 8 terms sequences the bottom 4 terms of it had appeared on their own in various places in the literature. These partial sequences came in both fixed and coincidence versions also in connection with Nielsen theory, but in a somewhat different context from that of Nielsen fibre space theory.

In this talk I outline how the 8 term sequences can be used to unify generalize and extend results in the second context of Reidemeister and Nielsen theory in both fixed point and coincidence cases. In doing this, we not only bring together generalize and extend the applications hinted at in the handbook chapter, but we also include more recent results including the work of Jezierski and Moh'D on the Nielsen theory of covering maps, as well as results on homogeneous spaces by a variety of authors. In particular using the work of Vendra'uscolo and Moh'D, we extend the coincidence averaging formula to non orientable infra-nilmanifolds.