

Speaker: **Saveliev, Peter**
Title: *Higher order Nielsen numbers*
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Abstract: Suppose X, Y are smooth manifolds, $f, g : X \rightarrow Y$ are maps. Then the Coincidence Problem studies the coincidence set $C = \{x : f(x) = g(x)\}$ and $m = \dim X - \dim Y$ is called the codimension of the problem. For a map $f : X \rightarrow Z$ and a submanifold Y of Z , the Preimage Problem studies the preimage set $C = \{x : f(x) \in Y\}$, $m = \dim X + \dim Y - \dim Z$. In case of codimension 0, the Nielsen number is the lower estimate of the number of points in C changing under homotopies of f, g , and for an arbitrary codimension, of the number of components of C . In this talk I will consider an approach to the calculation of other topological characteristics of C . The goal will be to estimate the bordism groups $\Omega_*(C)$. In comparison to the classical theory the Nielsen equivalence of the points of C is replaced with an equivalence of singular submanifolds of C . We consider topologically and algebraically essential classes and define higher order Nielsen numbers.