1037-57-316 **Dmitry N Kozlov*** (dfk@math.uni-bremen.de), Department of Mathematics, University of Bremen, Postfach 330440, D-28334 Bremen, Germany. *Discrete Morse theory and poset maps with small fibers.*

In this talk we shall consider Discrete Morse Theory in 3 contexts: posets, cell complexes, and chain complexes. We describe how the notion of poset maps with small fibers plays the crucial role in the combinatorial and topological contexts, in particular deriving the acyclic matching patchworking from the properties of poset fibrations. We shall also emphasize an algorithmic approach to Discrete Morse Theory for chain complexes. (Received February 05, 2008)