1044-57-32   **Sergiy Koshkin*** (`koshkin@math.northwestern.edu`). *Homotopy classification of maps into homogeneous spaces.*

We give an alternative to Postnikov's homotopy classification theorem for maps from 3-dimensional CW-complexes to homogeneous spaces of Lie groups. It allows extending the notion of homotopy class to Sobolev maps and describing maps in terms of connections on principal bundles. The techniques of gauge theory can then be used with applications to Faddeev and Skyrme models of quantum field theory. (Received July 08, 2008)