

1050-58-3

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In many problems from math physics and differential geometry, we are looking for solutions bearing specific topological informations. In dealing with these questions by variational methods, various spaces of weakly differentiable maps are introduced. A basic problem is the comparison between the suitably defined topological quantity of weakly differentiable maps and those of continuous maps. We will discuss some research in this direction. (Received May 15, 2008)