

Summary of my stage in Summer 2018

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1 Harmonic maps: examples and the reduction to a local PDE

See harmonic-maps.org

2 Finding the global equation

2.1 Uniqueness of the solution

3 Short-time existence and regularity result

3.1 Polynomial differential operator

3.2 Besov spaces

3.3 Regularity result

3.4 Short-time existence

4 Energy estimates and global existence.

5 Appendices: Linear PDE on manifolds.

5.1 The global approach

5.1.1 Comparison theorem and Sobolev spaces on manifold

See sobolev-riemannian.org

5.1.2 Green function

See green-function.org

5.2 The local approach

Hamilton