# 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