

Selected Topics in Lagrangian Geometry from Analytic Viewpoints

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1 Riemannian Geometry of Submanifolds

- First and second variations of volume
- Minimal surface equations
 1. Simons identity
 2. Curvature estimates
 3. Bernstein type theorems and Simons Cone
- Calibrations

2 Lagrangian Submanifolds

- Definition and examples of Lagrangian submanifolds
- Deformations through Lagrangian submanifolds
- Darboux's Theorem
- Lagrangian Neighbourhood Theorem

3 First Variation of Lagrangian Submanifolds

- Minimal Lagrangian submanifolds
- Hamiltonian stationary Lagrangian submanifolds
- Analytic aspects of the special Lagrangian and Hamiltonian stationary equations