

SURFACE TO SURFACE CHANGES OF VARIABLES AND APPLICATIONS

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ABSTRACT

The present thesis addresses a number of basic problems in relation to integration over surfaces in the Euclidean space, such as

- how the surface measure and unit normal changes under a smooth diffeomorphism
- how the integration process is affected by a surface to surface change of variables.

We provide precise answers to these and other related issues, and discuss a number of applications, such as the invariance of Lebesgue and Sobolev spaces on surfaces.