



Infinitesimal variations of submanifolds

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Abstract. The main purpose of these lecture notes is to present recent results in the theory of infinitesimal variations of submanifolds. The smooth variations under consideration are infinitesimally isometric or, in greater generality, infinitesimally conformal. The concept of infinitesimal variation is the infinitesimal analogue of an isometric variation and refers to smooth variations that preserve lengths “up to the first order”. In the more general case of conformal infinitesimal variations, lengths are preserved similarly but now up to a conformal factor. The study of such variations is realized by means of the corresponding variational vector fields, called infinitesimal bendings and conformal infinitesimal bendings respectively. Hence, these lecture notes contain results about nontrivial infinitesimal bendings and the geometry of the submanifolds that carry them.

Keywords. Infinitesimal variations; Infinitesimal bendings; Conformal infinitesimal bendings.