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**Sung Ho Wang\*** ([wang@postech.ac.kr](mailto:wang@postech.ac.kr)), Kias, 130-722 Seoul, South Korea. *Rigidity of submanifolds in homogeneous spaces.*

We propose a unified computational framework for the problem of deformation and rigidity of submanifolds in a homogeneous space under geometric constraint. A notion of 1-rigidity of a submanifold under admissible deformations is introduced, which can be considered as a geometric definition of infinitesimal rigidity.

We implement this idea to the question of rigidity of CR submanifolds in spheres. A class of submanifolds called Bochner rigid submanifolds are shown to be 1-rigid under type preserving CR deformations. Examples of Bochner rigid submanifolds are the canonical  $S^1$  bundles over Plucker embeddings.

A local characterization of Whitney submanifold is given, which is an example of a CR submanifold that is not 1-rigid. As a by product, we give a simple characterization of the proper holomorphic maps from the unit ball  $\mathbb{B}^{n+1}$  to  $\mathbb{B}^{2n+1}$ . (Received August 15, 2005)