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# Deformation Theory of CR-Structures and Its Application to Deformations of Isolated Singularities II

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## Introduction

Deformations of an analytic variety with only isolated singular points induce deformations of strongly pseudo-convex CR structures on its link. It is M. Kuranishi who initiated to consider deformations of compact strongly pseudo-convex CR structures expecting to describe deformations of isolated singular points of analytic varieties. Since non-equivalent CR manifolds can bound the same isolated singular point, we consider deformations of CR structures up to equivalence weaker than the CR-equivalence. This equivalence is induced from wiggling in a complex manifold and we will call the deformation theory of CR structures under that equivalence the *Kuranishi deformation theory* of CR structures. In [Ku3], [Ku4], M. Kuranishi obtained a $C^\infty$-family of deformations of the CR structure on a compact strongly pseudo-convex CR manifold of real dimension five or higher, continuing his early works on deformations of compact complex structures ([Ku1], [Ku2]). We consider holomorphic families of CR structures. In the first half of this survey, we will review the holomorphically parametrized deformation theory of strongly pseudo-convex CR structures developped by T. Akahori et al. ([Ak1], [Ak2], [Ak3], [Ak4], [Ak-My1], [Ak-My2], [Ak-My3], [Ak-My4], [Bu-Ml], [My1], [My2], [My3]) and its relationship with algebraic deformation theory of isolated singularities ([Do], [Gr], [Tj]).

The relationship between compact strongly pseudo-convex CR manifolds and isolated singularities is based on the fact that an embeddable compact strongly pseudo-convex CR manifold bounds a unique normal Stein complex space ([Ha-La]) and all compact strongly pseudo-convex

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