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LOCAL DEFORMATIONS OF ISOLATED SINGULARITIES ASSOCIATED WITH NEGATIVE LINE BUNDLES OVER ABELIAN VARIETIES

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Introduction

Let V be an analytic space with an isolated singularity p. In [1] M. Kuranishi approached the problem of deformations of isolated singularities (c.f. [2] and [3]) as follows; Let M be a real hypersurface in the complex manifold $V - \{p\}$. Then one has the induced CR-structure ${}^\circ T''(M)$ on M by the inclusion map $i: M \to V - \{p\}$ (c.f. Def. 1.6). Then deformations of the isolated singularity (V, p) give rise to ones of the induced CR-structure ${}^\circ T''(M)$. He established in § 9 in [1] the universality theorem for deformations of the induced CR-structure ${}^\circ T''(M)$, when M is compact strongly pseudo-convex (Def. 1.5) of $\dim M \geqq 5$. Form this theorem we can know CR-structures on M which appear in deformations of ${}^\circ T''(M)$.

Here we assume that V is 1-convex in the sense of Andoreotti-Grauert such that $\dim_C V \geqq 3$ and that M is a compact real hypersurface in $V - \{p\}$ defined by strictly plurisubharmonic function ρ on V such that $\rho \geqq 0$, that is, $M = \{q \in V; \rho(q) = c\}$, here c is a constant. Then as $\mathrm{Prof}_p V \geqq 2$, we find in terms of [2] that the infinitesimal deformation $H^1(V, \Theta)$ (c.f. [1]) of the isolated singularity (V, p) is regarded as a subspace of the infinitesimal deformation $H^1(M, {}^\circ T''(M))$ of ${}^\circ T''(M)$ (c.f. § 3). Therefore in order to solve the problem of local deformations of (V, p), it is enough to determine the infinitesimal deformations $H^1(M, {}^\circ T''(M))$ and complex structure on a neighborhood of M in $V - \{p\}$, which induce CR-structures on M appearing in deformations of ${}^\circ T''(M)$.

In this paper we shall prove, using the above Kuranishi's theory, the following.

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