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# Small Deformations of Certain Compact Manifolds of Class $L$, II

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## Introduction

In this paper, we shall construct the complete and effectively parametrized complex analytic family of small deformations of a Blanchard manifold. Let $\boldsymbol{P}^3$ be the complex projective space of dimension 3 with the system of homogeneous coordinates $[z_0: z_1: z_2: z_3]$. We define a projective line in $\boldsymbol{P}^3$ by

$$l=\{[z_0: z_1: z_2: z_3] \in \boldsymbol{P}^3: z_2=z_3=0\}$$

and $Z$ by $\boldsymbol{P}^3-l$. Let $\alpha={}^t(\alpha_1, \alpha_2, \alpha_3, \alpha_4)$, $\beta={}^t(\beta_1, \beta_2, \beta_3, \beta_4)$ be vectors in $\boldsymbol{C}^4$ such that $\det(\alpha\,\beta\,\bar{\alpha}\,\bar{\beta})\neq 0$. Then the matrices $A_i$ $(i=1, 2, 3, 4)$ defined by

$$A_i=\begin{pmatrix} \alpha_i & \beta_i \\ -\bar{\beta}_i & \bar{\alpha}_i \end{pmatrix} \in GL(2, \boldsymbol{C})$$

satisfy the condition $\det(\sum_{i=1}^{l} r_i A_i)\neq 0$ for any $(r_1, r_2, r_3, r_4) \in \boldsymbol{R}^4-\{(0, 0, 0, 0)\}$. We put

$$G_i=\begin{pmatrix} 1 & 0 & \multicolumn{2}{c}{\multirow{2}{*}{$A_i$}} \\ 0 & 1 & & \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

and denote by $g_i$ the automorphism of $Z$ determined by $G_i$ for $i=1, 2, 3, 4$. Then it is easy to see that the group of automorphisms $\Gamma$ generated by $g_i$ $(i=1, 2, 3, 4)$ acts on $Z$ properly discontinuously and without fixed points.

DEFINITION 0.1. We define a *Blanchard manifold* $X$ by the quotient space of $Z$ by $\Gamma$.

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