INOUE SURFACES AND THEIR GENERALIZATIONS.

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In 1972 M. Inoue constructed complex non-algebraic surfaces that proved very important for classification of surfaces via the Enriques-Kodaira scheme. These surfaces are quotients of $\mathbb{H} \times \mathbb{C}$ by action of a discreet group associated to a given matrix in $SL(3, \mathbb{Z})$. K. Oeljeklaus and M. Toma generalized Inoue's construction to higher dimensions (2005). The Oeljeklaus-Toma manifolds are the quotients of $\mathbb{H}^s \times \mathbb{C}^n$ by action of a discreet group, associated to the maximal order of a given algebraic number field.

In this talk, I will give a brief overview of these works and related results. Then I will discuss a new generalization of the Inoue surfaces to higher dimensions. The manifolds in question are quotients of $\mathbb{H} \times \mathbb{C}^n$ by an action of a discreet group associated to a given matrix in $SL(2n + 1, \mathbb{Z})$. This is a joint work with Hisaaki Endo.