Some examples of CalabiYau manifolds

NDRIÇIM SADIKAJ, ANILA DUKA
Department of Mathematics, Faculty of Technical Sciences, University "Ismail Qemali", Vlorë, Albania
ndsadikaj@gmail.com, dukaanila@gmail.com

The space-time in string theory is often described by means of a mathematical object called manifold. Manifolds are very important objects from the mathematical and the physics point of view, not only in string theory. Calabi-Yau manifolds are complex manifolds and they exist in any even dimension. The simplest examples of Calabi-Yau manifolds have one complex dimension. Some simple examples of non compact Calabi-Yau two-folds, which have two complex dimensions are $\mathbb{C}^2 = \mathbb{C} \times \mathbb{C}, \mathbb{C} \times T^2$. $K3$ and T^4 are two examples of four-dimensional compact Kähler manifolds for which they exist. Examples of a Calabi-Yau n-folds can be constructed as a submanifold of $\mathbb{C}P^{n+1}$ for all $n > 1$. The most important examples are manifolds of G_2 and $Spin(7)$ holonomy.