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# Simply Connected Symplectic Calabi-Yau 6-Manifolds

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In this paper, we construct simply connected symplectic Calabi-Yau 6-manifolds by applying Gompf's symplectic fiber sum operation along  $S^1 \times S^3$ . Using our construction, we also produce symplectic non-Kähler Calabi-Yau 6-manifolds with fundamental group  $\mathbb{Z}$ . In this paper, we also produce the first examples of simply connected symplectic Calabi-Yau and non-Calabi-Yau 6-manifolds via coisotropic Luttinger surgery.

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