

It is known that the product of two Sasakian manifolds carries a 2-parameter family of Hermitian structures  $(J_{a,b}, g_{a,b})$ . In this poster we will prove that  $J_{a,b}$  is harmonic with respect to  $g_{a,b}$  (i.e. it is a critical point of the Dirichlet's Energy functional  $\int_M \|\nabla J\|^2 \text{vol}_g$ ) and we will investigate under which conditions these Hermitian structures are locally conformally Kähler, balanced, strong Kähler with torsion, Gauduchon or  $k$ -Gauduchon ( $k \geq 2$ ). Moreover, we will study the Bismut connection associated to  $(J_{a,b}, g_{a,b})$  and we will provide formulas for the associated Bismut-Ricci tensor  $\text{Ric}^B$  and the Bismut-Ricci form  $\rho^B$ . We will show that these tensors vanish if and only if each Sasakian factor is  $\eta$ -Einstein with appropriate constants and we will also exhibit some examples fulfilling these conditions, thus providing new examples of Calabi-Yau with torsion manifolds. This poster is based on [this preprint](#).