

INSTANTONS IN 7-DIMENSIONS: CONTACT, G_2 AND HERMITIAN YANG-MILLS

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RESUMEN. We study a natural *contact instanton* equation on gauge fields over 7-dimensional Sasakian manifolds, which is closely related to both the G_2 -instanton equation and transverse Hermitian Yang-Mills (tHYM) equation. We prove by standard Fredholm theory that the moduli space of irreducible solutions has a finite-dimensional local description, following the approach by Baraglia and Hekmati in 5 dimensions. As an instance of concrete interest, we specialise to transversely holomorphic Sasakian bundles over 7-dimensional Calabi-Yau links, as studied by Calvo-Andrade, Rodríguez and Sá Earp, and we show that in this context the notions of contact instanton, compatible G_2 -instanton and tHYM connection coincide.