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Supersymmetric type IIB Supergravity solutions with an AdS_5 factor and vanishing self dual flux

We continue the classification of Type IIB supergravity solutions whose metric is a warped product of AdS_5 and a 5 dimensional Riemannian manifold M_5 carried out by Gauntlett, Martelli, Sparks and Waldram. We study the general bosonic solutions where the self dual field strength is vanishing. Via the AdS/CFT correspondence these should correspond to an insofar unexplored class of $N=1$ SCFT's arising from wrapped 5-branes. We show that supersymmetry implies an identity structure on M_5 and also implies the Supergravity equations of motion and Bianchi identities. We show that a recent solution from "Type IIB Supergravity Solutions with AdS_5 From Abelian and Non-Abelian T Dualities" satisfies the classification.