

1111-83-407

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Umbilical properties of co-dimension two submanifolds.

Co-dimension two submanifolds which are umbilical along some normal direction are studied in Lorentzian manifolds. New characterizations and properties will be presented. They may arise in many situations of physical interest, such as isolated horizons, conformal Killing vectors, algebraically special solutions, etc. Time permitting, relevant examples will be discussed. (Received February 07, 2015)