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**David E Betounes\*** ([betounes\\_d@utpb.edu](mailto:betounes_d@utpb.edu)), 4901 E. University Blvd, Odessa, TX 79762. *The Geometry of Space-Time-Matter.*

We formulate a global, differential geometric structure for the space-time-matter theory introduced by Wesson and coworkers. In addition to giving a coordinate-free, intrinsic approach to the theory, we extend the discussion from 5-dimensions to arbitrary dimensions.

Our model for space-time-matter is a Ricci flat, semi-Riemannian manifold  $(E, \bar{g})$ , where  $E$  is a fiber bundle over  $M$  (the spacetime) and  $\bar{g}$  is a Kaluza-Klein metric on  $E$ . Each space-time-matter manifold  $(E, \bar{g})$  generates spacetimes  $(M, \tilde{g})$ , one for each embedding of  $M$  in  $E$ , with stress-energy tensor for  $M$  determined by the geometry of  $E$  and the nature of the embedding. (Received September 20, 2012)