

1118-53-228

Albert J. Todd* (ajtodd@southalabama.edu). *On the standard G_2 almost contact metric structure.*

An almost contact metric structure on an odd-dimensional smooth manifold is a quadruple (ϕ, ξ, η, g) consisting of a $(1, 1)$ -tensor, a non-vanishing vector field ξ , a 1-form η and a compatible metric g satisfying a number of relations; a G_2 -structure on a smooth 7-manifold induces, in particular, a 3-form φ , a two-fold vector cross product and G_2 metric g_φ . Work of Arkian, Cho and Salur shows that one can construct a particular almost contact metric structure that encodes the two-fold vector cross product and the G_2 metric; we call this the standard G_2 almost contact metric structure. It is known from work of Fernández and Gray that there are 2^4 classes of G_2 structures and from work of Chinea and Gonzalez that there are 2^{12} classes of almost contact metric structures. Recent articles by several authors, including myself, have focused on understanding the relationships between the classes of G_2 structures and the classes of the resulting standard G_2 almost contact metric structure. In this talk, I will report on my work on the classification problem for the standard G_2 almost contact metric structure as well as recent research on related problems. (Received February 01, 2016)