Talk on September 26, 2024, 10:00 am

Speaker: Prof. Marius Crainic, University of Utrecht

Title:The Lawson-Mitsumatsu symplectic foliation via generalized
complex geometry

Abstract:

The question of existence of codimension one symplectic foliations on manifolds played an important role in the development of Foliation Theory: starting with Reeb's foliation on \$S^3\$ all the way to Thurston's complete characterization in terms of the Euler characteristic. The next step after Reeb's example was Lawson's foliation on \$S^5\$ (and other odd dimensional spheres, and all of them at the end). The similar question for symplectic foliations is far from being understood. While Reeb's on \$S^3\$ is easily seen to work, Lawson's on \$S^5\$ is already very challenging. And even though the case of \$S^5\$ was answer positively by Mitsumatsu, the construction is rather technical and seemingly ad-hoc. The aim of this talk is to explain that (stable) generalised complex structures can be used to re-do the case of \$S^5\$ in a, we byelieve, much more conceptual and transparent way. This is based on joint work with Gil Cavalcanti.