

November 30, 2020

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*Formally integrable complex structures and
parallel vector cross products*

The notion of a multilinear vector cross product (VCP) has been introduced by Gray as a natural generalization of the notion of an almost complex structure. In my lecture I shall present a correspondence between parallel VCPs on a Riemannian manifold M and parallel almost complex structures on a higher dimensional knot space over M endowed with a L^2 -metric. This generalizes Brylinski's, LeBrun's and Verbitsky's results for the case that S is a codimension 2 submanifold in M , and $S = S^1$ or M is a torsion-free G_2 -manifold respectively. Using VCPs, I shall also show similarities between integrable complex structures on one hand and torsion-free G_2 -and Spin(7)-structures on the other hand. My talk is based on my joint works with D. Fiorenza, K. Kawai, L. Schwachhöfer, J. Vanzura, and L. Vitagliano.

SCIENTIFIC SEMINAR

“DIFFERENTIAL GEOMETRY AND APPLICATIONS”

headed by Academician of RAS Anatoly T. Fomenko

**The seminar takes place online in ZOOM on Mondays
from 5:45 p.m. to 7:20 p.m. (Moscow time)**

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