A criterion for homogeneous potentials to be 3-Calabi-Yau applied to algebras constructed from Steiner triple systems

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Among the homogeneous potentials w of degree $N+1$ in n variables, it is an open problem to find precisely which of the w's are 3-Calabi-Yau, although several examples are known. In this talk, I will use the criterium of [1] to prove that algebras obtained from Steiner triple systems in [2], which generalize [3] and [4], are 3-Calabi-Yau.

References

[1] R. Berger, A. Solotar, *A criterion for homogeneous potentials to be 3-Calabi-Yau.* `arXiv:1203.3029`

[2] J. Eisenschlos, *3-Calabi-Yau Algebras from Steiner Systems.* Master thesis, Universidad de Buenos Aires, 2013.

[3] S. P. Smith, *A 3-Calabi-Yau algebra with G_2 symmetry constructed from the octonions.* `arXiv:1104.3824v1`

[4] M. Suárez-Alvarez, *3-Calabi-Yau algebras from Steiner triple systems.* preprint May 2011.