INTERSECTIONS OF QUADRICS AND H-MINIMAL LAGRANGIAN SUBMANIFOLDS

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We study the topology of Hamiltonian-minimal Lagrangian submanifolds N in C^m constructed from intersections of real quadrics in the work Mironov. This construction is linked via an embedding criterion to the well-known Delzant construction of Hamiltonian toric manifolds.

We establish the following topological properties of N: every N embeds as a submanifold in the corresponding moment-angle manifold Z, and every N is the total space of two different fibrations, one over a torus with fibre a real moment-angle manifold R, and another over a quotient of R by a finite group (known as a small cover) with fibre a torus. These properties are used to produce new examples of H-minimal Lagrangian submanifolds with quite complicated topology. The interpretation of our construction in terms of symplectic reduction leads to its generalisation providing new examples of H-minimal submanifolds in toric varieties.

The talk is based on a joint work with Andrey Mironov.

[1] Andrey Mironov and Taras Panov, *Intersections of quadrics, moment-angle manifolds, and Hamiltonian-minimal Lagrangian embeddings*, Preprint (2011); arXiv:1103.4970