Families of cycles and their envelopes

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In Laguerre geometry, under the isotropy projection, a codimension two spacelike submanifold in the Lorentz-Minkowski n-space describes a smooth $(n-2)$-parameter family of cycles in the Euclidean $(n-1)$-space with exactly two envelopes. In this talk, we will discuss the causal character of its mean curvature vector in terms of the geometry of the associated (constant rank) envelopes, with special emphasis on $n \in \{3, 4\}$. Several examples will be presented.

This is joint work with Rui Pacheco (Universidade da Beira Interior).