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**VI International Meeting on Lorentzian Geometry  
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Plenary Talk: Stationary-to-Randers correspondence  
and convexity**

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Stationary-to-Randers correspondence (SRC) is a bijective map between Finsler metrics of Randers type on a smooth manifold  $S$  and conformal standard stationary Lorentzian metrics on  $S \times \mathbb{R}$ . In this talk we focus on some convexity properties in a Randers space (as infinitesimal convexity of a hypersurface, convexity of a large sphere in an asymptotically flat manifold) and on their counterpart by SRC. The talk is based on results contained in the following papers:

E. Caponio, M. A. Javaloyes, A. Masiello, “On the energy functional on Finsler manifolds and applications to stationary spacetimes”, *Mathematische Annalen*, in press;

E. Caponio, M.A. Javaloyes, M. Sanchez, “On the interplay between Lorentzian Causality and Finsler metrics of Randers type”, *Revista Matemática Iberoamericana*, 27/3 (2011) 919–952. [arXiv:0903.3501](#);

R. Bartolo, E. Caponio, A.V. Germinario, M. Sanchez “Convex domains of Finsler and Riemannian manifolds”, *Calculus of Variations and Partial Differential Equations*, 40/3-4 (2011) 335 - 356. [arXiv:0911.0360](#);

E. Caponio, M.A. Javaloyes, A. Masiello “Finsler geodesics in the presence of a convex function and their applications”, *Journal of Physics A, Mathematical and Theoretical*, 43/13 (2010), 135207 - 135222. [arXiv:0910.3176](#)  
and on a work in collaboration with A.V. Germinario and M. Sanchez.