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ICMAT (Madrid, Spain)
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Plenary Speakers

Jan Maas (Institute of Science and Technology, Austria)
Marina Logares (University of Plymouth, UK)
Tong Tang (Hohai University, China)
Rafael Ramírez Uclés (Universidad de Granada, Spain)
Javier López Peña (University College London, UK)
Anabel Forte (Universitat de València, Spain)
Isabel Fernández (Universidad de Sevilla, Spain)

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Book of Abstracts for the parallel sessions

is given by

$$\|x\|_{X_\theta} = \inf\{\|F\|_{\mathcal{F}} \,:\, F(\theta) = x\}.$$

In the article "Homéomorphismes uniformes entre les sphères unité des espaces d'interpolation", M. Daher defines the complex interpolation space as the holomorphic functions over $\mathcal{S}$ however replacing the continuity of the operators over $\overline{\mathcal{S}}$ by a condition of integrability L_p. This allows to find on certain hypotheses a minimal representation for each point of the interpolation domain in a uniformly continuous way. In other words, the result presented by Daher is the following: if $(X_0, X_1)_{\theta_1}$ is an interpolation couple, $\theta_1, \theta_2 \in (0,1)$ and X_0 is uniformly convex, then exists a uniform homeomorphism between the unit sphere of the complex interpolation space $X_{\theta_1} = (X_0, X_1)_\theta$ and the unit sphere of X_{θ_2}.
The goal is to consider the notion of minimal functions in the Banach lattice setting and find the form of uniform homeomorphisms between spheres of interpolation scales in this case (in particular, we want to analyze examples of spaces L_p for $1 < p < \infty$).

Geometry

— Jaime Santos Rodríguez
Universidad Autónoma de Madrid
- **Title**: Wasserstein isometries on the sphere
- **Abstract**: Given a Riemannian manifold (M, g) we can consider $\mathbb{P}_2(M)$ the space of probability measures on M. Using optimal mass transportation we can endow $\mathbb{P}_2(M)$ with the so called L^2-Wasserstein distance. It will turn out that many geometric properties of M are closely related to those of $\mathbb{P}_2(M)$. For example, M is non-negatively curved if and only if $\mathbb{P}_2(M)$ is non.negatively curved (in the sense of Alexandrov).
It is easily seen that given an isometry $\varphi : M \to M$ we can define via push-forwards an isometry on $\mathbb{P}_2(M)$. Therefore an interesting question would be to determine whether the isometry group of $\mathbb{P}_2(M)$ is strictly larger than that of M.
In this talk we will focus on the case of $\mathbb{S}^n$. we will discuss the optimal transport of measures supported there and prove that the isometry groups of $\mathbb{S}^n$ and of $\mathbb{P}_2(\mathbb{S}^n)$ coincide.

— Boris Stupovski
SISSA (Trieste)
- **Title**: Five-dimensional manifolds with positive biorthogonal curvature
- **Abstract**: Biorthogonal curvature on a Riemannian manifold is defined as the minimum of the average of sectional curvatures of a plane and planes orthogonal to it. Bettiol classified, up to homeomorphism, closed simply-connected 4-manifolds with positive biorthogonal curvature. In this talk, we present a first result in this direction in dimension five. Namely, that every closed simply-connected spin 5-manifold with torsion-free homology admits a metric of positive biorthogonal curvature.

— Eduardo Mota