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Differentiability and strict convexity of the stable norm

Abstract. I will show how the cell formula for the stable norm (or minimal action) recently proved by Chambolle and Thouroude permits to investigate its strict convexity and differentiability properties. For totally irrational directions it is proven that the stable norm is always differentiable whereas in the other directions it is differentiable if and only if the plane-like minimizers in this direction which satisfy the strong Birkhoff property give rise to a foliation of the space. This answers a conjecture raised by Caffarelli and De La Llave. It is a joint work with A.Chambolle and M.Novaga.
