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Marius Mitrea* (mitream@missouri.edu), University of Missouri, Department of Mathematics, Columbia, MO 65211. *The directional derivative problem without transversality*. Preliminary report.

The origin of the directional derivative problem goes back to the work of H. Poincare on the theory of tides. Ever since this groundbreaking work, it has been of interest to consider this problem in an as general geometric measure theoretic setting as possible. In my talk, I will discuss the version of this problem without the familiar transversality condition typically imposed on the direction vector field used to formulate the boundary condition. (Received February 08, 2014)