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Dmitri Zaitsev* (zaitsev@maths.tcd.ie), School of Mathematics, Trinity College Dublin, Dublin 2, Ireland, and **Pierre Dolbeault** and **Guisepppe Tomassini**. *Which manifolds bound Levi-flat hypersurfaces?*

In this work we study the problem of characterising real submanifolds in \mathbf{C}^n that bound Levi-flat hypersurfaces, the CR analogues of minimal surfaces. In contrast to the extensively studied case $n = 2$, in higher dimension $n > 2$, a boundary of a Levi-flat hypersurface must satisfy a nontrivial local condition at its CR points, the so-called nowhere minimality. There is also a flatness condition at the complex points, where the complex tangent space dimension (the CR-dimension) “jumps”. We show that these necessary conditions are essentially sufficient for the given submanifold to be a boundary of an “immersed Levi-flat subvariety”, an immersed Levi-flat “hypersurface” with singularities. The proof ingredients include the Reeb-Thurston stability theorem for foliations as well as a parametric version of the Harvey-Lawson theorem on the existence of complex-analytic chains with prescribed boundaries. (Received February 13, 2008)