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Peter Ebenfelt* (pebenfel@math.ucsd.edu), Department of Mathematics, University of California, San Diego, La Jolla, CA 92093-0112, and **Salah Baouendi** and **Dmitri Zaitsev**. *Real hypersurfaces of low and constant Levi rank*. Preliminary report.

There is a trivial way of constructing real hypersurfaces in complex space whose Levi forms have constant, but less than full rank. Namely, if M is a Levi nondegenerate real hypersurface in \mathbb{C}^{n+1} , then $M \times \mathbb{C}^m$ is a hypersurface in \mathbb{C}^{n+k+1} whose Levi form has precisely m null eigenvalues at every point. It is less trivial to see that there are examples that cannot be put in the form $M \times \mathbb{C}^m$ by a local biholomorphic transformation at a general point. One such example, that has attracted much attention recently, is the tube in \mathbb{C}^{n+1} over the light cone in \mathbb{R}^{n+1} . The Levi form of this hypersurface has exactly one null eigenvalue at every point. However, to the best of the authors' knowledge, there were no known examples of a (nontrivial) hypersurface in \mathbb{C}^{n+1} whose Levi form has precisely k , with $n - k \geq 2$, null eigenvalues at every point. We present a construction that generates many such examples. The construction hinges on a result of Cauchy-Kowalevsky type for an overdetermined system of Monge–Ampere-like partial differential equations. This latter result seems to be of independent interest. (Received August 02, 2007)