VIRTUAL EAST-WEST SCV SEMINAR

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Segre-Degenerate Points Form a Semianalytic Set

The set of Segre-degenerate points of a real-analytic subvariety X in $\mathbb{C}^n$ is a closed semianalytic set. If X is coherent, it is a subvariety. More precisely, the set of points where the germ of the Segre variety is of dimension k or greater is a closed semianalytic set in general, and for a coherent X, it is a real-analytic subvariety of X. For a hypersurface X in $\mathbb{C}^n$, the set of Segre-degenerate points, $X_{[n]}$, is a semianalytic set of dimension at most $2n-4$. If X is coherent, then $X_{[n]}$ is a complex subvariety of (complex) dimension $n-2$. Example hypersurfaces are given showing that $X_{[n]}$ need not be a subvariety and that it also need not be complex; $X_{[n]}$ can, for instance, be a real line.