

1077-30-1015

John Wermer* (wermer@math.brown.edu), 128 Irving Ave, Providence, RI 02906. *Polynomial Hulls of Certain Compact Manifolds.*

Let X be a compact set in C^n and let X^\wedge denote the polynomial hull of X . Rossi's Local Maximum Principle suggests that $X^\wedge \setminus X$ is either empty or has analytic structure. In full generality, this is false. Question: Let X be a smooth compact orientable k -manifold in C^n . When does $X^\wedge \setminus X$ possess analytic structure? For $k = 1$ (smooth curves) it is known that, when X is not equal to X^\wedge , the answer is "always". A classical result by A. Browder from 1961 gives that, for $k = n$, the cohomology group $H^k(X^\wedge, C) = 0$, and so X^\wedge is not X . For $k = 2$, we discuss some consequences of Browder's result. For general k , we give a necessary condition on X in order that $X^\wedge \setminus X$ has analytic structure. Finally, we point out contributions to this problem, in terms of the existence of certain (1,1) currents, due to Duval and Sibony, in the 1990's. (Received September 15, 2011)