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A Note on the Hilbert Nullstellen Satz

The analytic Hilbert Nullstellen Satz is well-known: If the germ g_a at a in $\mathbf{C}^m$ of a holomorphic function g vanishes on the germ at a of the variety $Z = \{f_1 = \cdots = f_N\}$, then some power of g_a belongs to the ideal generated by the germs $f_{j,a}$. In this note this result is proved for holomophic functions defined on a normal complex space under suitable conditions, allowing the common zero set Z to be discrete or of positive dimension. It is also shown that the power for the germ g_a above is locally constant at every point of Z and is independent of g.