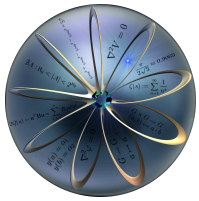

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Weierstrass polynomial

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Definition. A function $W\colon \mathbb{C}^n \to \mathbb{C}$ of the form

$$W(z_1, \ldots, z_n) = z_n^m + \sum_{j=1}^{m-1} a_j(z_1, \ldots, z_{n-1}) z_n^j,$$

where the a_j are holomorphic functions in a neighbourhood of the origin, which vanish at the origin, is called a *Weierstrass polynomial*.

Any codimension 1 complex analytic subvariety of $\mathbb{C}^n$ can be written as the zero set of a Weierstrass polynomial using the Weierstrass preparation theorem. This in general cannot be done for higher codimension.

References

[1] Lars Hörmander. , North-Holland Publishing Company, New York, New York, 1973.

[2] Steven G. Krantz. , AMS Chelsea Publishing, Providence, Rhode Island, 1992.