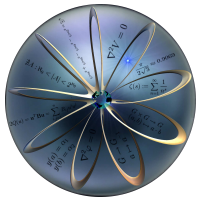

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Hartogs extension theorem

Canonical name	HartogsExtensionTheorem
Date of creation	2013-03-22 15:34:54
Last modified on	2013-03-22 15:34:54
Owner	jirka (4157)
Last modified by	jirka (4157)
Numerical id	4
Author	jirka (4157)
Entry type	Theorem
Classification	msc 32H02

Theorem. *Suppose V is an analytic variety in an open set $U \subset \mathbb{C}^n$ $(n \geq 2)$ of dimension at most $n-2$ and suppose that $f\colon U \backslash V \to \mathbb{C}$ is holomorphic. Then there exists a unique holomorphic extention of f to all of U.*

Note that when V is 0 dimensional (a point) then this is just a special case of the Hartogs' phenomenon. Also note the similarity to Riemann's removable singularity theorem in several variables, where however we also assume that f is locally bounded.

References

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

[2] Hassler Whitney. . Addison-Wesley, Philippines, 1972.