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irreducible component

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Let $G \subset \mathbb{C}^N$ be an open set.

Definition. A locally analytic set (or an analytic variety) $V \subset G$ is said to be *irreducible* if whenever we have two locally analytic sets V_1 and V_2 such that $V = V_1 \cup V_2$, then either $V = V_1$ or $V = V_2$. Otherwise V is said to be . A maximal irreducible subvariety of V is said to be an *irreducible component* of V . Sometimes irreducible components are called *ircomps*.

Note that if V is an analytic variety in G , then a subvariety W is an irreducible component of V if and only if W^* (the set of regular points of W) is a connected complex analytic manifold. This means that the irreducible components of V are the closures of the connected components of V^* .

References

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