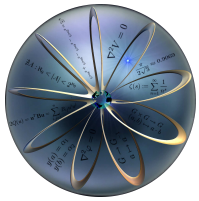

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invariant subspace problem

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Initially formulated for Banach spaces, the **invariant subspace conjecture** stated the following:

Let X be a complex Banach space. Then every bounded operator T in X has a non-trivial `http://planetmath.org/ClosedSet`*closed invariant subspace, i.e. there exists a closed vector subspace $S \subset X$ such that $S \neq 0$, $S \neq X$ and $T(S) \subseteq S$.*

This conjecture was proven to be false when P. Enflo (1975) and . Read (1984) gave examples of bounded operators which did not have the above property.

However, if one considers only Hilbert spaces, this is still an open problem. Today the **invariant subspace conjecture** is formulated as follows:

Let H be a complex Hilbert space. Then every bounded operator T in H has a non-trivial invariant subspace, i.e. there exists a closed vector subspace $S \subset H$ such that $S \neq 0$, $S \neq H$ and $T(S) \subseteq S$.