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totally real submanifold

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Defines	maximally totally real manifold
Defines	maximally real manifold

**Definition.** Suppose that  $M \subset \mathbb{C}^N$  is a CR submanifold. If the CR dimension of  $M$  is 0, we say that  $M$  is *totally real*. If in addition  $M$  is <http://planetmath.org/GenericManifoldgeneric>, then  $M$  is said to be *maximally totally real* (or sometimes just *maximally real*).

Note that if  $M$  is maximally totally real, then the real dimension is automatically  $N$ , this is because  $T_x^c(M) = T_x(M) \cap JT_x(M)$  (the complex tangent space) is of dimension 0, and thus  $T_x(M)$  must be of real dimension  $N$  if  $M$  is to be a generic manifold.

## References

- [1] M. Salah Baouendi, Peter Ebenfelt, Linda Preiss Rothschild. , Princeton University Press, Princeton, New Jersey, 1999.