

**Almost complex structures,
transverse complex structures, and
(p,0) Dolbeault cohomology**

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An almost complex structure j on a manifold M is integrable if and only if its Nijenhuis tensor N^j vanishes, and this is true iff the distribution $T_j^{(1,0)} \subset TM^{\mathbb{C}}$ is involutive.

When it is not integrable, we relate properties of M to properties of distributions associated to j . In particular, we study conditions for j to define a complex transverse structure and we relate the transverse $(p, 0)$ Dolbeault cohomology to the $(p, 0)$ generalized Dolbeault cohomology of (M, j) as introduced recently by Cirici and Wilson.