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Emil J. Straube* (straube@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77843. *Reflections on the $\bar{\partial}$ -Neumann operator and Stein neighborhood bases*. Preliminary report.

We will discuss sufficient conditions for regularity properties of the $\bar{\partial}$ -Neumann operator in several settings and compare them to sufficient conditions, in the same settings, for the existence of a Stein neighborhood basis for the closure of the domain. The theme that emerges is that the former are equally strict or stricter than the latter. The question to what extent regularity properties might have implications for the existence of a Stein neighborhood basis thus presents itself. (Received February 01, 2008)