COMPACTNESS AND THE $\overline{\partial}_b$ PROBLEM

ABSTRACT. In this talk we will consider sufficient conditions for the existence of a compact solution operator for the $\overline{\partial}_b$ problem. On bounded smooth domains in $\mathbb{C}^n$, it suffices to show that the $\overline{\partial}$-Neumann operator is compact. In this case, compactness in L^2 implies compactness in the Sobolev space $W^{\frac{1}{2}}$, so we have a well-defined boundary trace. To make use of the $\overline{\partial}$-Neumann operator on non-smooth domains, we need to show that we still have compactness in $W^{\frac{1}{2}}$. We will provide sufficient conditions for obtaining the necessary estimates on C^2 and Lipschitz domains.