

# ANALYSIS ON DECOUPLED DOMAINS IN $\mathbb{C}^{n+1}$

DER-CHEN CHANG, GEORGETOWN UNIVERSITY

## 1. ABSTRACT:

A domain  $\Omega \subset \mathbb{C}^{n+1}$  and its boundary  $\mathcal{M}$  are said to be decoupled if there are subharmonic, nonharmonic polynomials  $\mathcal{P}_j$  with  $\mathcal{P}_j(0) = 0$  such that

$$\Omega = \{(z_1, \dots, z_n, z_{n+1}) : \text{Im}(z_{n+1}) > \sum_{j=1}^n \mathcal{P}_j(z_j)\}.$$

In this talk, we give detailed discussion of recent progress of the  $\bar{\partial}$ -Neumann problem. Using this result, we obtain solving operator for inhomogeneous Cauchy-Riemann equation  $\bar{\partial}U = f$  in  $\Omega$ . Here  $f = \sum_{j=1}^{n+1} f_j \bar{\omega}$  is a given  $(0, 1)$ -form. Then we discuss the “possible” optimal estimates of the solution.