ROGER BARNARD, Texas Tech University, Lubbock, Texas

Iceberg-type problems in two dimensions

We consider the complex plane $\mathbb{C}$ as a space filled with two different media, separated by the real axis $\mathbb{R}$. Let H denote the upper half-plane. For a planar body E, the iceberg-type problem is to estimate characteristics of the invisible part $E \setminus H$ from the characteristics of the whole body E and its visible part $E \cap H$.

In this talk, we outline the methods we use to determine the maximal draft of E as an explicit function of the logarithmic capacity of E and the area of $E \cap H$.