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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 \( E \cap H \).