

# The Cauchy Kernel, the Szegő Kernel, and the Riemann Mapping Function

Dariusz Piekarz

Talk given at Seminar on Complex Analysis,  
meeting 2364, October 23rd, 2023

We will discuss connections between Cauchy and Szegő kernels in case of bounded, smooth domains in the complex plane  $\mathbb{C}$ . Additionally, in the case of simply-connected, "nearly-circular" domains we express the Szegő kernel using a geometric Neumann series, and we will provide a connection between a Riemann mapping function and the Szegő kernel.