

FRACTALS AND CONFORMAL INVARIANCE

STANISLAV SMIRNOV

Oded Schramm defined a new family of conformally invariant random fractal curves in the plane, the Stochastic Loewer Evolutions. He showed that SLEs are the only possible conformally invariant candidates for the scaling limits of interfaces in 2D critical lattice models. This led to solution of several open problems in mathematical physics and probability.

Maybe more surprisingly, there are several questions in classical analysis where conformally invariant fractals arise. We will discuss how SLE and other constructions could help to understand some long open problems in complex analysis.