

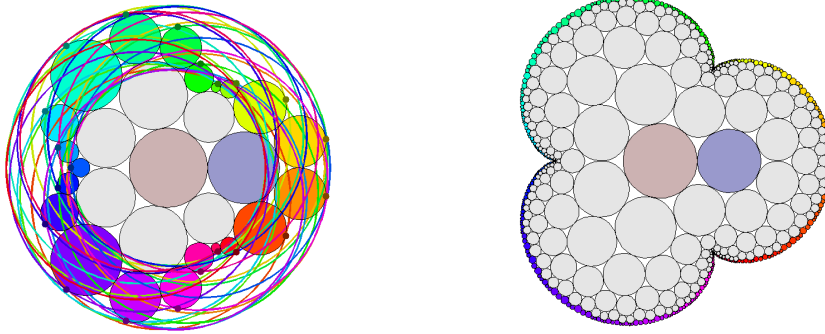
How to solve singular integral equations using frog spawn

Elias Wegert
TU Bergakademie, Freiberg, Germany

In this lecture we study the metamorphosis of nonlinear singular integral equations

$$f\left(t, u(t), \int_0^{2\pi} u(s) \cot \frac{t-s}{2} ds\right) = 0.$$

In the course of the talk more and more geometry will enter the scene and formulas will disappear, so that eventually only circles remain. With some phantasy, the final problem could even be solved by mathematically trained frogs.



The mathematical background is the transformation of singular integral equations to boundary value problems in circle packing via Riemann-Hilbert problems.

PS. To get a flavour how frogs treat mathematical problems, you may consult www.math.tu-freiberg.de/~wegert/Papers/Frogs.pdf