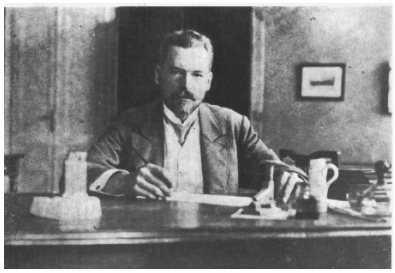

Contribution ID: **51** Type: **talk**

Duality in Percolation

Tuesday, 4 September 2018 16:30 (45 minutes)

In this talk we discuss the importance of duality in two-dimensional percolation, from the determination of thresholds exactly (the star-triangle transformation, the triangle-triangle transformation, the isoradial construction) to the question of the behavior of the number of clusters at the critical point, in which duality and the Euler graph formula play important roles. (Work here with Christian Scullard, Youjin Deng and Stephan Mertens). A connection is also made to numerical methods and recent incredibly precise work done by Jesper Jacobsen and Chris Scullard, which takes advantage of duality considerations. Other applications of duality include crossing problems, which are also closely connected with conformal invariance. Applications of percolation to models of cancer growth, epidemic spreading, and general phase transitions will also be discussed.

Primary author: Prof. ZIFF, Robert M. (University of Michigan)

Presenter: Prof. ZIFF, Robert M. (University of Michigan)

Session Classification: Tue evening