

## COMPLEX FUNCTIONS VIA BRANCHED COVERINGS

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The aim of this talk is to demonstrate how topology helps us in understanding complex analysis. More specifically, using the theory of branched covers, we will show how one can understand classical theorems such as Fundamental Theorem of Algebra, Open Mapping Theorem, Maximum Modulus Theorem, etc. Further, these techniques also help us understand why the number of zeroes of a meromorphic function on the Riemann Sphere ( or any compact Riemann Surface ) is equal to the number of poles.

The level of the talk will be at second year graduate mathematics program. The only prerequisites assumed are a first course in Complex Analysis and Topology of Surfaces. We will motivate the results with many examples and pictures.

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