

## Colloquium in Mathematics



**Title:** Vertex operator algebras on Riemann surfaces

**Speaker:** Michael Tuite (National University of Ireland, Galway)

**Time:** 1:00 pm - 1:50 pm on Thursday (10/22/20)

**Zoom Meeting ID:** 946 5302 5788, Passcode: MathCollo

**Abstract:** It is well known that vertex operator algebras are deeply connected to elliptic functions and modular forms. An important tool in that context is genus one Zhu recursion where elliptic functions and modular forms arise as universal coefficients in certain recursion relations. This talk describes recent work generalizing Zhu recursion to an arbitrary Riemann surface where the recursion formula contains universal convergent coefficients with a specific geometrical meaning. A number of examples are discussed and some new geometrical identities described. This talk is mainly based on joint work with Michael Welby.

**About Speaker:** Dr. Michael Tuite earned a B.Sc. in Mathematical Science in 1978, an M.Sc. in 1979 and a Ph.D. in Theoretical High Energy Physics in 1984 from the University of Cambridge. He spent four years at Trinity College Dublin as a post-doctoral fellow, one year at Dublin City University as a contract lecturer and two years as a research scholar at the Dublin Institute for Advanced Studies. Currently, Dr. Tuite is a full professor of Mathematics at the National University of Ireland, Galway.

Dr. Tuite's research interests are in theoretical physics (quantum field theory and conformal field theory) and pure mathematics (vertex operator algebras, the Monster group, modular groups and Riemann surfaces). Most recently he has been working on genus two and higher conformal field theory and vertex operator algebras. Dr. Tuite is also interested in exceptional vertex operator algebras, superconformal algebras, Mathieu Moonshine, Jacobi forms, Lie algebras and combinatorics. **Join Zoom Meeting**

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