CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, September 10
2:00 – 3:00 PM
Maria Sanford, Room 101

REPRESENTATIONS OF TRIGONOMETRIC CHEREDNIK ALGEBRAS OF RANK ONE IN POSITIVE CHARACTERISTIC

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ABSTRACT

I will classify the irreducible representations of the trigonometric Cherednik algebras of rank 1 in characteristic $p > 0$. There are two cases. One is the "quantum" case, where "Planck's constant" is nonzero and generic irreducible representations have dimension $2p$. In this case, smaller representations exist if and only if the "coupling constant" k is in F_p; namely, if k is an even integer such that $0 < k < p - 1$, then there exist irreducible representations of dimensions $p - k$ and $p + k$, and if k is an odd integer such that $1 < k < p - 2$, then there exist irreducible representations of dimensions k and $2p - k$. The other case is the "classical" case, where "Planck's constant" is zero and generic irreducible representations have dimension 2. In that case, one-dimensional representations exist if and only if the "coupling constant" k is zero.

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