

# **Ramanujan's theta functions and the number of representations of $n$ as a linear combination of several triangular numbers**

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In this talk, using Ramanujan's theta functions  $\varphi(q)$  and  $\psi(q)$  we reveal some general relations between the number of representations of  $n$  as a linear combination of several triangular numbers and the number of representations of  $m$  as a linear combination of several squares. We also pose several conjectures on the coefficients in the expansion of certain products of eta functions.