



# RUTGERS - CAMDEN MATH SEMINAR

11-12, FRIDAY OCT. 15<sup>TH</sup>, BSB 132

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# Dr. Will Lee

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**Title: Deligne's Inequality and a Lower Bound for Ramanujan's Tau Function**

Abstract: Here we give a stronger version of Lehmer's Conjecture that  $|\tau(p)| > (1/3)p^3$ , which implies the Lehmer's Conjecture. We then establish the sharp lower bound,  $|\tau(p)| > p^4$ , using basically the same method as the first one. Remarkably,  $A(p)$  turned to be periodic or semi-periodic from which we get the sharp lower bound.

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