

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

# Zeros of combinations of derivatives of the Riemann xi function on the critical line

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Monday, November 28 at 4:15 pm  
111 Cummington Mall, MCS B21  
Tea and cookies in MCS 144 at 4:00 pm

**Abstract:** The Riemann Hypothesis implies that the zeros of all the derivatives of the Riemann xi function  $\xi(s)$  lie on the critical line. Results on the proportion of zeros on the critical line of derivatives of  $\xi(s)$  have been investigated before, and it has been shown that the percentage of zeros of  $\xi^{(k)}(s)$  approaches 100 percent as the order of the derivative increases. In this talk, we prove a result for combinations of derivatives of  $\xi(s)$ . Although our combinations do not always have all their zeros on the critical line, we show that the proportion of zeros on the critical line tends to 1.