1135-41-3205 **Xin Li*** (xin.li@ucf.edu), Department of Mathematics, 4000 Central Florida Blvd, Mathematical Science Building 207, Orlando, FL 32816. *A weighted max-min-max problem on the unit circle.* Preliminary report.

Let w be a polynomial of degree n with all zeros contained in $|z| > 1$ in the complex plane. Consider

$$m_{n,w} = \max_{0\le t_1<t_2<\cdots<t_n<2\pi} \min_{1\le j\le n} \left(\max_{t_j\le t\le t_{j+1}} \left| \frac{\prod_{k=1}^{n}(e^{it}-e^{it_k})}{w(e^{it})} \right| \right), \ (t_{n+1} := t_1)$$

When $w(z) \equiv 1$, Khrushchev established that $m_{n,1} = 2$. Erdelyi, Hardin, and Saff demonstrated this as a consequence of an *inverse* Bernstein inequality for polynomials on the unit circle. In this talk, we will show that the above weighted max-min-max problem is related to an inverse Bernstein inequality for rational functions on the unit circle. (Received September 27, 2017)