Richard Fournier* (`fournier@dms.umontreal.ca`). *Cases of equality for refinements of Bernstein's inequality.*

Let $\mathbb{D}$ denote the unit disc $\{z \mid |z| < 1\}$ of the complex plane and

$$|f|_{\mathbb{D}} := \sup_{z \in \mathbb{D}} |f(z)|$$

for any function f defined on $\mathbb{D}$. Bernstein's inequality states that

$$|p'|_{\mathbb{D}} \leq n|p|_{\mathbb{D}}$$

for $p \in \mathcal{P}_n$, the class of complex polynomials of degree at most n, with equality only if p is a monomial of degree n. We shall discuss in this talk cases of equality for refinements of Bernstein's inequality, for example:

$$|p'|_{\mathbb{D}} \leq n|\operatorname{Re} p|_{\mathbb{D}} \quad \text{and} \quad |p'|_{\mathbb{D}} \leq n \max_{0 \leq j \leq n} |p(e^{ij\pi/n})|.$$

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