Richard Fournier* (fournier@dms.umontreal.ca), CRM and DMS, CP 6128, Succ. Centre-ville, Montreal, Quebec H3C 3J7, Canada. An interpolation formula for divided differences of algebraic polynomials and some inequalities following from it.

Let \( D \) denote the unit disc of the complex plane and \( P_n \) the class of polynomials of degree at most \( n \) with complex coefficients. It has been obtained that

\[
\max_{z \in \partial D} \left| \frac{p_k(z) - p_k(\bar{z})}{z - \bar{z}} \right| \leq n^{1+k} \max_{0 \leq j \leq n} \left| \frac{p(e^{ij\pi/n}) + p(e^{-ij\pi/n})}{2} \right|,
\]

where \( p_0 := p \) belongs to \( P_n \) and for \( k \geq 0 \), \( p_{k+1}(z) := z p_k'(z) \). We obtain a new proof of a well-known inequality of Duffin and Schaeffer and of some other classical inequalities as the inequality of Schur. (Received July 23, 2018)