

On the computational complexity of symmetric functions

Dima Grigoriev

Computing symmetric polynomials is a classical topic, in particular, in the complexity theory. Since this area is vast one considers usually, certain subclasses of symmetric polynomials.

We suppose to give a survey of earlier results and also to present two recent complexity bounds. The first one is an exponential lower bound (joint with G. Koshevoy) of a suitable monomial symmetric function by monotone calculations (so, using only additions and multiplications). The second one is an upper bound on the monotone complexity (joint with S. Fomin, D. Nogneng, E. Schost) of the complete symmetric polynomials, and as a consequence of Schur polynomials.

Also some open questions will be discussed.

Dima Grigoriev
CNRS, France
Universite de Lille,
59655, Villeneuve d'Ascq, France

e-mail: dima.grigoryev@gmail.com