Notation.

- Let P be a d-dimensional simple polytope.
- Let α_i, $i = 0, 1, \ldots, d-1$ be the number of its i-dimensional faces (i-faces for short).
- For any face f of P denote by α_i^f the number of its i-faces.
- Let $\alpha_k^{(i)}$ be the average number of i-faces of a k-face of P:

$$\alpha_k^{(i)} = \frac{1}{\alpha_k} \sum_{\dim f = k} \alpha_i^f .$$

For any simple, compact, convex polytope $P \subset \mathbb{E}^d$ and any $i < k \leq [d/2]$ holds

$$\alpha_k^i < \binom{d-i}{d-k} \frac{\binom{[d/2]}{i} + \binom{[(d+1)/2]}{i}}{\binom{[d/2]}{k} + \binom{[(d+1)/2]}{k}}.$$

[Nik] V. V. Nikulin, *On the classification of arithmetic groups generated by reflections in Lobachevsky spaces.* Math. USSR Izv. 18 (1982), 99–123.