



Mathematics > Combinatorics

Lattice Point Generating Functions and Symmetric Cones

[Matthias Beck](#), [Thomas Bliem](#), [Benjamin Braun](#), [Carla Savage](#)

(Submitted on 7 Jun 2012)

We show that a recent identity of Beck-Gessel-Lee-Savage on the generating function of symmetrically constrained compositions of integers generalizes naturally to a family of convex polyhedral cones that are invariant under the action of a finite reflection group. We obtain general expressions for the multivariate generating functions of such cones, and work out the specific cases of a symmetry group of type A (previously known) and types B and D (new). We obtain several applications of the special cases in type B, including identities involving permutation statistics and lecture hall partitions.

Comments: 19 pages

Subjects: **Combinatorics (math.CO)**; Number Theory (math.NT)

MSC classes: 05A15, 51F15, 05A17, 52B15

Cite as: [arXiv:1206.1551](#) [math.CO]

(or [arXiv:1206.1551v1](#) [math.CO] for this version)

Submission history

From: Benjamin Braun [[view email](#)]

[v1] Thu, 7 Jun 2012 16:44:23 GMT (16kb)

[Which authors of this paper are endorsers?](#)

Link back to: [arXiv](#), [form interface](#), [contact](#).

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

math.CO

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1206](#)

Change to browse by:

[math](#)

[math.NT](#)

References & Citations

- [NASA ADS](#)

Bookmark([what is this?](#))

