### Mathematics > Combinatorics

# Sweeping the cd-Index and the Toric h-**Vector**

Carl W. Lee

(Submitted on 10 Nov 2010)

We derive formulas for the cd-index and the toric h-vector of a convex polytope P from a sweeping by a hyperplane. These arise from interpreting the corresponding S-shelling of the dual of P. We describe a partition of the faces of the complete truncation of P to reflect explicitly the nonnegativity of its cd-index and what its components are counting. One corollary is a quick way to compute the toric h-vector directly from the cd-index. We also propose an "extended toric" h-vector that fully captures the information in the flag h-vector.

Comments: 23 pages

Combinatorics (math.CO) Subjects:

MSC classes: 52B05

Cite as: arXiv:1011.2264v1 [math.CO]

### **Submission history**

From: Carl Lee [view email]

[v1] Wed, 10 Nov 2010 02:59:34 GMT (26kb)

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 | 1011

Change to browse by:

math

### References & Citations

NASA ADS

Bookmark(what is this?)











