**Thrust axis**

**1. Thrust**

Thrust is a quantity that falls in the range (0.5, 1.0). It is a measure of the alignment of the particles within an event along a common axis. The lower the thrust, the more spherical the event is. The higher the thrust, the more jet-like the event is.

**2. Thrust Axis**

The thrust axis is the vector along which the maximum alignment is found. The axis of the vector $A$ in the following formula is the theust axis:

$$\text{thrust} = max \left| \frac{\sum_{i=1}^{N} |A \cdot P_i|}{\sum_{i=1}^{N} \sqrt{P_i \cdot P_i}} \right|$$

where $A \cdot B$ is the dot product of three vectors $A$ and $B$, $|X|$ is the absolute value of $X$, $N$ is the number of particles used in the calculation, $A$ is the thrust axis with unit length, and $P_i$ is the three momentum of particle $i$.

The thrust axis has a two-fold ambiguity due to taking the absolute value of the dot product. Both $A$ and $-A$ give the same value for the thrust. There is no inherent physical meaning to the sign of the vector.