The four-vector of the jets is calculated in the FourVectorSummer the following way:

$$p = (E, \mathbf{p}) = \sum_{\mathbf{i} \subset \mathbf{J}} (\mathbf{E^i}, \mathbf{p^i_x}, \mathbf{p^i_y}, \mathbf{p^i_z}) \tag{1}$$

where J stands for "jet" and the sum is over each tower i. From this, the jet variables are calculated this way::

$$p_T = \sqrt{p_x^2 + p_y^2} \tag{2}$$

$$|p| = \sqrt{p_x^2 + p_y^2 + p_z^2} \tag{3}$$

$$\theta = \arctan \frac{p_T}{p_z} \tag{4}$$

$$\phi = \arctan \frac{p_y}{p_x} \tag{5}$$

$$E_T = E \sin \theta \tag{6}$$

$$y = \frac{1}{2} \ln \frac{E + p_z}{E - p_z} \tag{7}$$

$$\eta = \frac{1}{2} \ln \frac{p + p_z}{p - p_z} \tag{8}$$