# Beam and Window functions manual

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## 1 Window function

### 1.1 TT-PP-TP window function(focal plane):

- **Input:** a set 14 coefficient from the beam Hermite functions parametrization $(\sigma_b, \{a_n\}_{n=0}^{n=12})$ **BEAM_normalization(sigma, c0, ..., c12)**

  **BEAM(theta,sigma, c0, c1, ..., c12)** compose the beam $B(\theta) = \sum_n a_n H_n(\theta/\sigma)\exp(-1/2\theta^2/\sigma_b^2)$

  **BEAM_2i(theta,sigma,i)** Evaluate the $B_{2n}$ mode in $\theta$

  **integrand(theta,sigma,l,i)** Define the integrand for the Harmonic transformation of the $B_{2n}$-mode. $2\pi\sin(\theta)B_{2n}(\theta)P_l(\cos(\theta))$

  **basis_trans(sigma,l,i)** Compute the Harmonic transformation of the $B_{2n}$-mode. $\int_0^\pi d\theta 2\pi\sin(\theta)B_{2n}(\theta)P_l(\cos(\theta))$