$U_p(4) \times U_q(4)$

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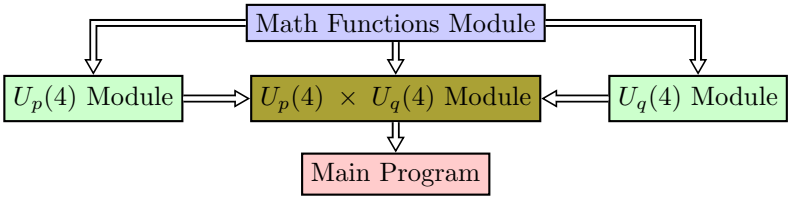

0.1 Math Functions Module → `MOD_matfun.f90`

- Functions:
  - `p_symbol`(a,b) = $(a)_s = a(a+1)...(a+s-1)$

0.2 $U_p(4)$ Module → `MOD_Up4.f90`

Hamiltonian:

$$\hat{H}_{U_p(4)} = \beta \mathcal{C}_2\left[so_p(4)\right] + \gamma \mathcal{C}_2\left[so_p(3)\right] + \gamma_2\left[\mathcal{C}_2\left[so_p(3)\right]\right]^2 + \kappa \mathcal{C}_2\left[so_p(4)\right]\mathcal{C}_2\left[so_p(3)\right] \tag{1}$$

- Global definitions:
  - Npval: $U(4)$ Totally symmetric representation.
- Functions:
  - Function: `RME_Casimir_SOp4`
  - Function: `RME_Casimir_SOp3`
  - Function: `RME_Qp2`