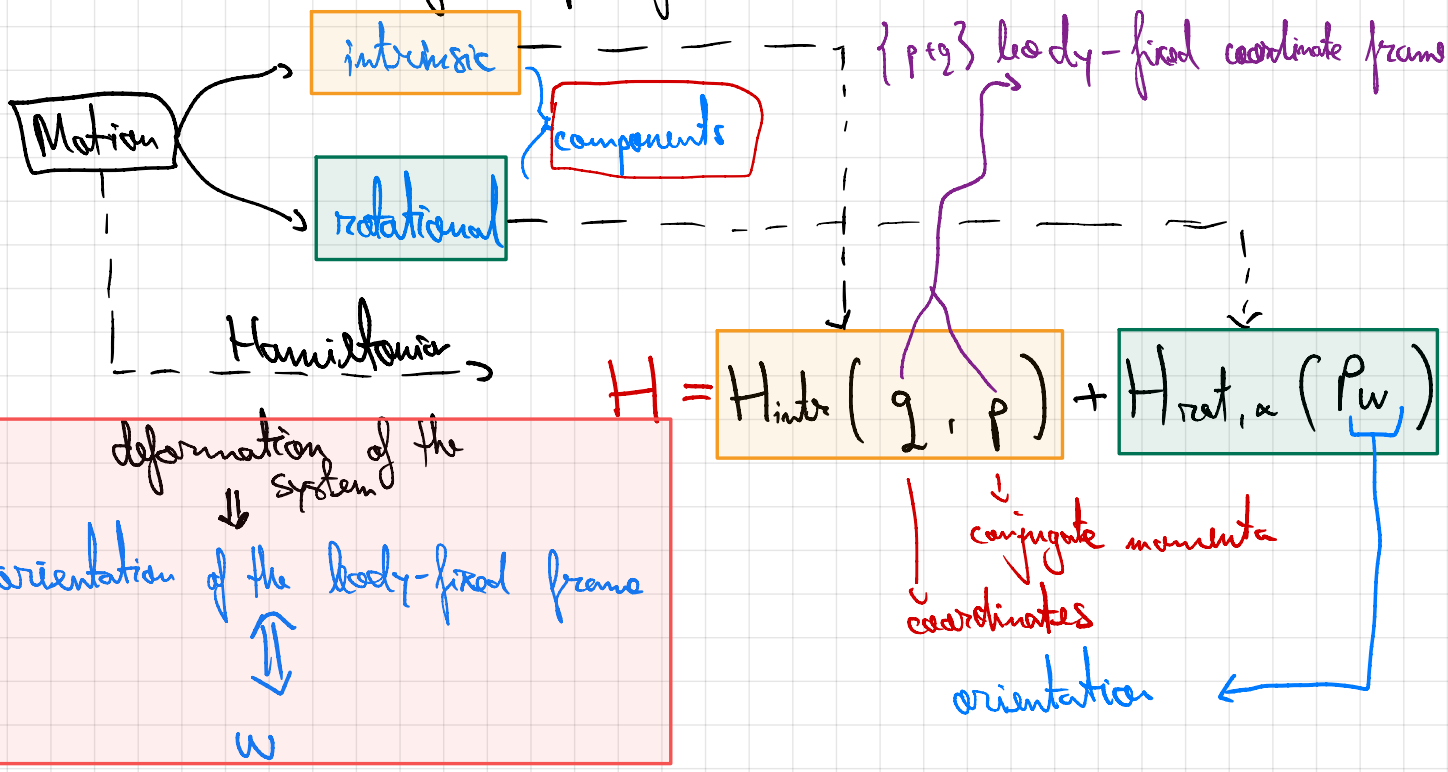
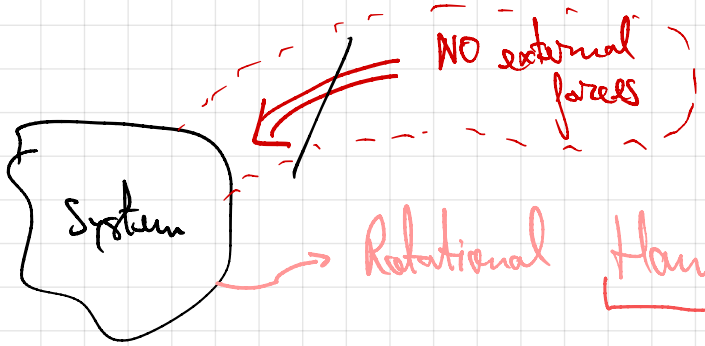
- Symmetries of deformation
  - ↳ rotational degrees of freedom





→ Rotational Hamiltonian independent of w

⇓

is a function of the conjugate angular momenta

$$H_{rot} = f(P_w)$$

$H_{rot,\alpha}(P_w)$

→ the rotational motion may depend on the quantum numbers α

⇓

specify an intrinsic property

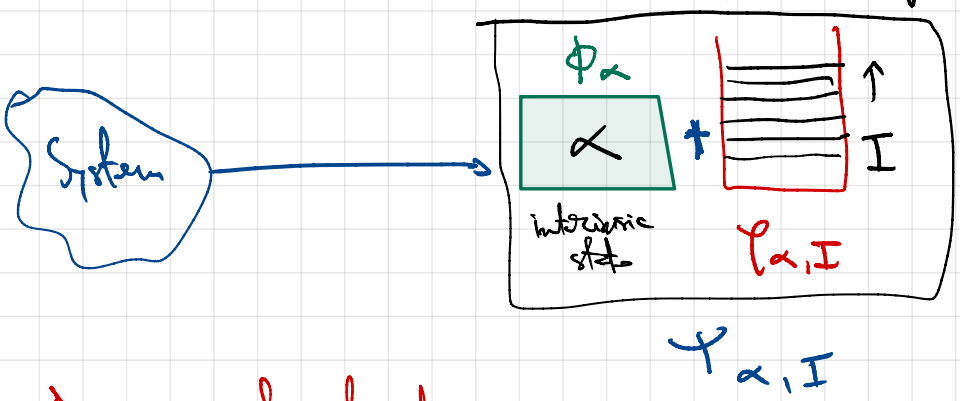
$$H = H_{intr} + H_{rot} \Rightarrow \text{Eigenvalues} \Rightarrow \psi_{\alpha,I} = \phi_\alpha(q)\,\varphi_{\alpha I}(w)$$

angular momentum quantum numbers

$\Psi_{\alpha,I}$

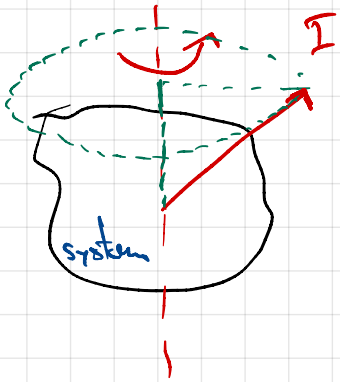
$\downarrow$

Ψ_α => spectrum involves sequence of rotational levels



$\Psi_{\alpha,I}$

Degrees of freedom (spatial rotations)



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$\Psi_{\alpha I}$