Preuve 8.2

$$\frac{d\vec{L}_O(M_i)}{dt} = \sum_{j \neq i} \vec{\mathcal{M}}_O(\vec{F}_{j \to i}) + \vec{\mathcal{M}}_O(\vec{F}_{ext \to i})$$

$\sum_i$

$$\Rightarrow \frac{d\vec{L}_O(S)}{dt} = \underbrace{\sum_i \sum_j \vec{\mathcal{M}}_O(\vec{F}_{j \to i})}_{=\vec{0}} + \underbrace{\sum_i \vec{\mathcal{M}}_O(\vec{F}_{ext \to i})}_{=\vec{\mathcal{M}}_O(\vec{F}_{ext})}$$

$$\Leftrightarrow \boxed{\frac{d\vec{L}_O(S)}{dt} = \vec{\mathcal{M}}_{O,ext}} \quad \square$$