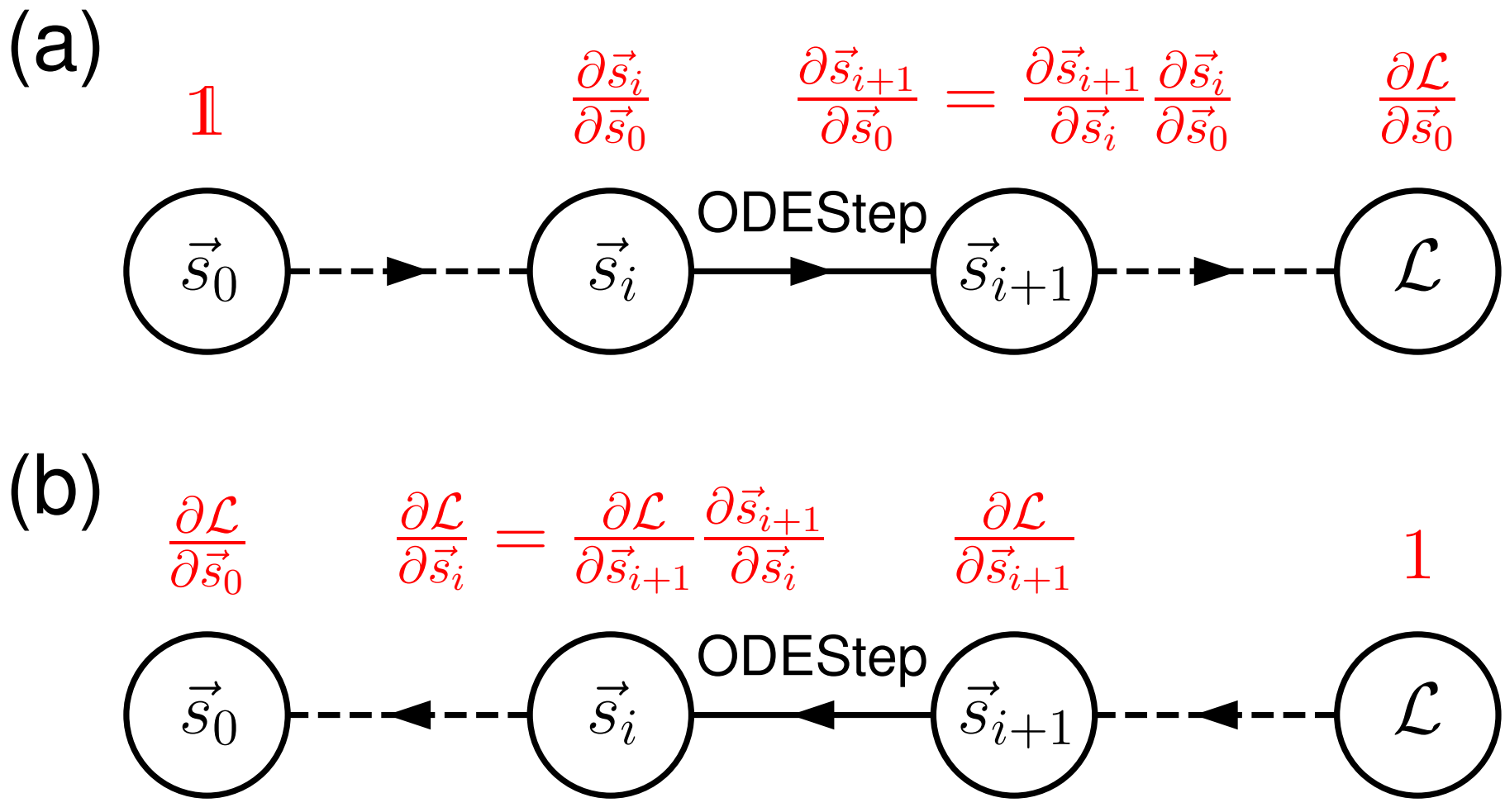
(a)
$\mathbb{1}$
$\frac{\partial \vec{s}_i}{\partial \vec{s}_0}$
$\frac{\partial \vec{s}_{i+1}}{\partial \vec{s}_0} = \frac{\partial \vec{s}_{i+1}}{\partial \vec{s}_i}\frac{\partial \vec{s}_i}{\partial \vec{s}_0}$
$\frac{\partial \mathcal{L}}{\partial \vec{s}_0}$
$\vec{s}_0$
$\vec{s}_i$
ODEStep
$\vec{s}_{i+1}$
$\mathcal{L}$
(b)
$\frac{\partial \mathcal{L}}{\partial \vec{s}_0}$
$\frac{\partial \mathcal{L}}{\partial \vec{s}_i} = \frac{\partial \mathcal{L}}{\partial \vec{s}_{i+1}}\frac{\partial \vec{s}_{i+1}}{\partial \vec{s}_i}$
$\frac{\partial \mathcal{L}}{\partial \vec{s}_{i+1}}$
1
$\vec{s}_0$
$\vec{s}_i$
ODEStep
$\vec{s}_{i+1}$
$\mathcal{L}$