

$$(u,v)\rightarrow (r,\theta,\phi)=[1,\quad u,\quad v]$$

$$g=\begin{bmatrix}1&0\\0&1\end{bmatrix}$$

$$\nabla f = \partial_u f \boldsymbol{e}_{\boldsymbol{u}} + \partial_v f \boldsymbol{e}_{\boldsymbol{v}}$$

$$F=F^u\boldsymbol{e}_{\boldsymbol{u}}+F^v\boldsymbol{e}_{\boldsymbol{v}}$$

$$\nabla F = (\partial_u F^u + \partial_v F^v) + (-\partial_v F^u + \partial_u F^v)\, \boldsymbol{e}_{\boldsymbol{u}} \wedge \boldsymbol{e}_{\boldsymbol{v}}$$

$$g=[1]$$

$$(s)\rightarrow (u,v)=[\frac{\pi}{8},\quad s]$$

$$H=H^s\boldsymbol{e}_{\boldsymbol{s}}$$

$$H^s\boldsymbol{e}_{\boldsymbol{s}}$$

$$\nabla h = \partial_s h \boldsymbol{e}_{\boldsymbol{s}}$$

$$\nabla H = \partial_s H^s$$