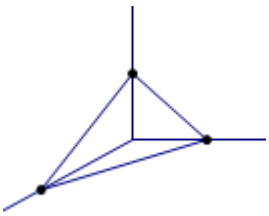

求$\iint_s F\cdot\vec{n}\,dS=$ 其中 F=(z,-y,x)，S:x+2y+2z=2，

$x\ge 0, y\ge 0, z\ge 0$

$X(u,v)=(u,v,\frac{2-u-2v}{2})$

$X_u=(1,0,-\frac{1}{2}), X_v=(0,1,-1)$

$E=\frac{5}{4}, F=\frac{1}{2}, G=2$ ， $\vec{n}=(\frac{1}{3},\frac{2}{3},\frac{2}{3})$ ， $\sqrt{EG-F^2}=\frac{3}{2}$

$$\iint_s F\cdot ndS=\iint_R(\frac{1}{2}-\frac{3}{2}y+\frac{3}{4}x)dxdy=\int_0^1\int_0^{2-2y}(\frac{1}{2}-\frac{3}{2}y+\frac{3}{4}x)dxdy$$

$$=\int_0^1(\frac{9}{2}y^2-7y+\frac{5}{2})dy=\frac{1}{2}$$

$$z=f(x,y)=\frac{1}{2}(2-x-2y), \frac{\partial f}{\partial x}=-\frac{1}{2}, \frac{\partial f}{\partial y}=-1$$

$$F\cdot(-\frac{\partial f}{\partial x},-\frac{\partial f}{\partial y},1)=\frac{3}{4}x-\frac{3}{2}y+\frac{1}{2}$$

$$\iint_S F\cdot\vec{n}dS=\iint_R(\frac{3}{4}x-\frac{3}{2}y+\frac{1}{2})dxdy=\ldots$$