$$= \int_{0}^{2\pi} \int_{-1}^{1} \left(\cos^{2}\theta \sin^{2}\theta + \cos^{2}\theta \sin^{2}\theta \right) d\theta dz = 4 \int_{0}^{2\pi} \cos^{2}\theta \sin^{2}\theta d\theta =$$

$$= 4 \int_{0}^{2\pi} (\cos\theta \sin\theta)^{2} d\theta = 4 \int_{0}^{2\pi} (\frac{1}{2} \sin 2\theta)^{2} d\theta = 5 \cos 2\theta = 2 \sin 2\theta$$

$$= \int_{0}^{2\pi} \sin^{2}2\theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} (1 - \cos \theta) \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \cos \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0}^{2\pi} \sin \theta \ d\theta = \int_{0}^{2\pi} \frac{1}{2} d\theta - \frac{1}{2} \int_{0$$

$$= \Pi - \frac{\cos 4\theta}{8} \int_{0}^{2\pi} = \Pi.$$

En resomen, el flujo a traves de S es igual al Plujo a través de Ŝ = S & USz con S ASz = p por lo que

$$\iint_{S} \vec{F} \cdot d\vec{S} = \iint_{S} \vec{F} \cdot d\vec{S} = \iint_{S_{1}} \vec{F} \cdot d\vec{S} = 0 + \Pi = \Pi$$

Carried along a service and a service as

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(cathered, cares also b) - for the read of the to