

[2] 続き

(3)

$$S_2 : x^2 + y^2 - (1-z)^2 = 0$$

$$u = \left(z \{x^2 + y^2 - (1-z)^2\}, z \{x^2 + y^2 - (1-z)^2\}, x^2 + y^2 - (1-z)^2 + 1 \right)$$

$$= (0, 0, 1)$$

$$S_2 = \frac{2\pi}{2\sqrt{2}\pi} \cdot \pi \cdot \sqrt{2}^2$$

$$= \sqrt{2}\pi$$

$$\operatorname{div} u = 0 + 0 + 0 = 0$$

$$\iiint_V \operatorname{div} u \, dv = 0$$

