

4. The flux through Arizona is

$$\Phi = -B_r A = -(43 \times 10^{-6} \text{ T})(295,000 \text{ km}^2)(10^3 \text{ m/km})^2 = -1.3 \times 10^7 \text{ Wb} ,$$

inward. By Gauss' law this is equal to the negative value of the flux  $\Phi'$  through the rest of the surface of the Earth. So  $\Phi' = 1.3 \times 10^7 \text{ Wb}$ , outward.