

**Definition 0.0.1: Variabelsubtitution i sfäriska koordinater**

$x = R\sin(\phi)\cos(\theta)$ ,  $y = R\sin(\phi)\sin(\theta)$ ,  $z = R\cos(\phi)$ . Volymelementet blir då

$$R^2\sin(\phi) \implies dx dy dz = R^2\sin(\phi) dR d\phi d\theta$$