

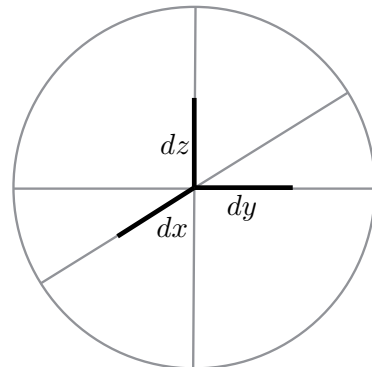
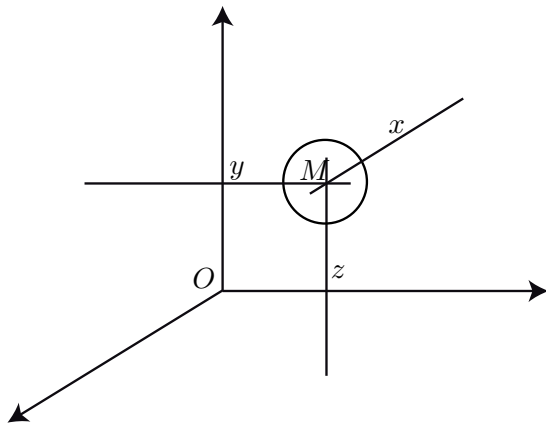
Longueurs, surfaces et volumes élémentaires

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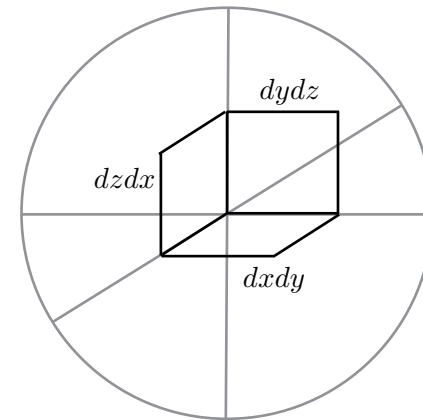
1 Coordonnées cartésiennes

1.1 Longueurs élémentaires

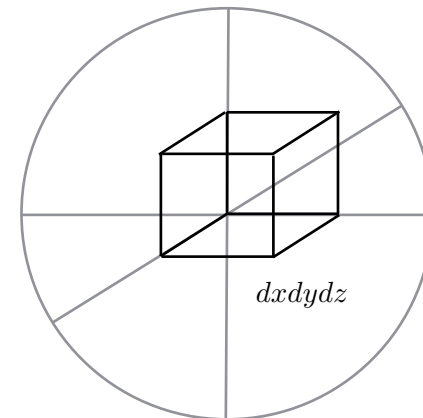


$$d\mathbf{OM} = dx\mathbf{e}_x + dy\mathbf{e}_y + dz\mathbf{e}_z$$

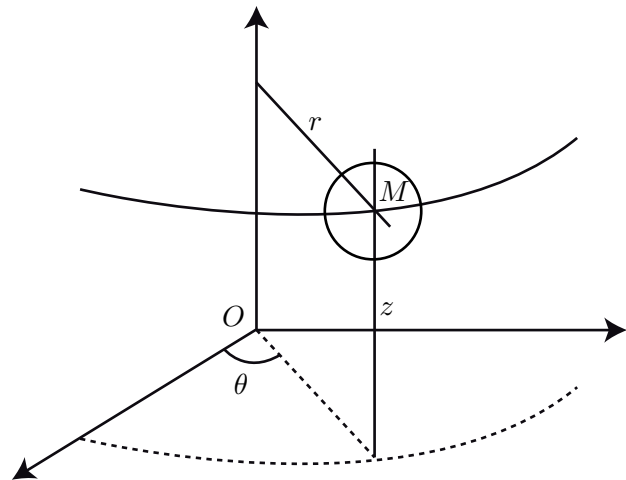
1.2 Surfaces élémentaires



1.3 Volume élémentaire

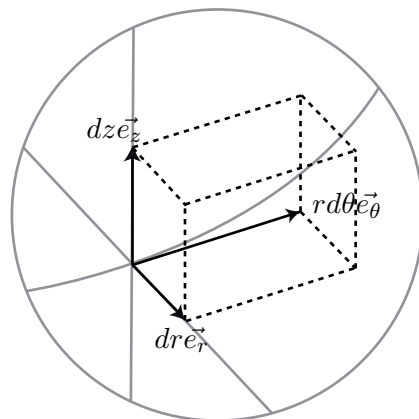
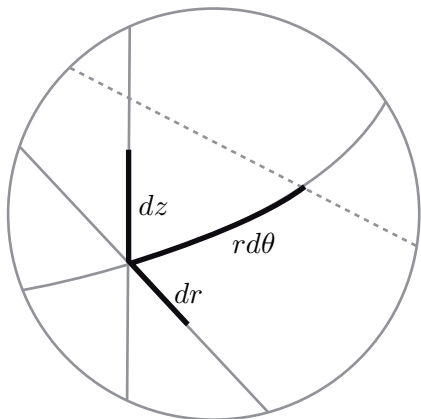


2 Coordonnées cylindriques

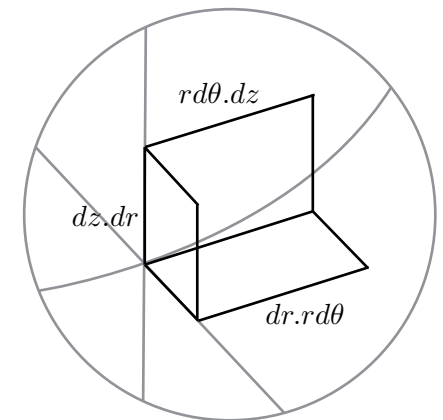
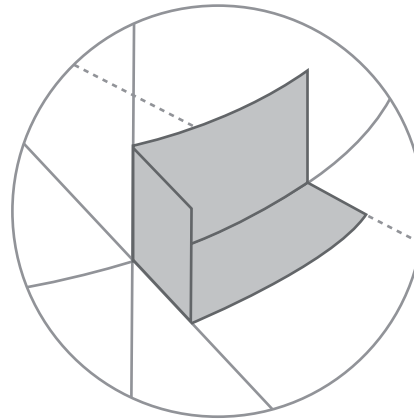


$$d\mathbf{OM} = dr \mathbf{e}_r + r d\theta \mathbf{e}_\theta + dz \mathbf{e}_z$$

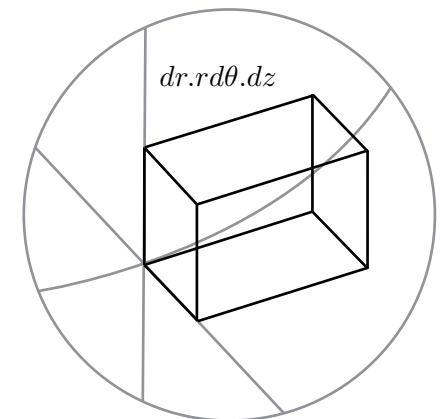
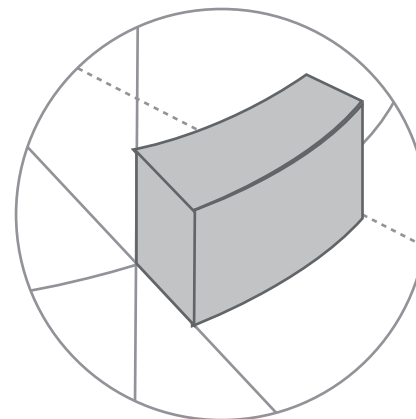
2.1 Longueurs élémentaires



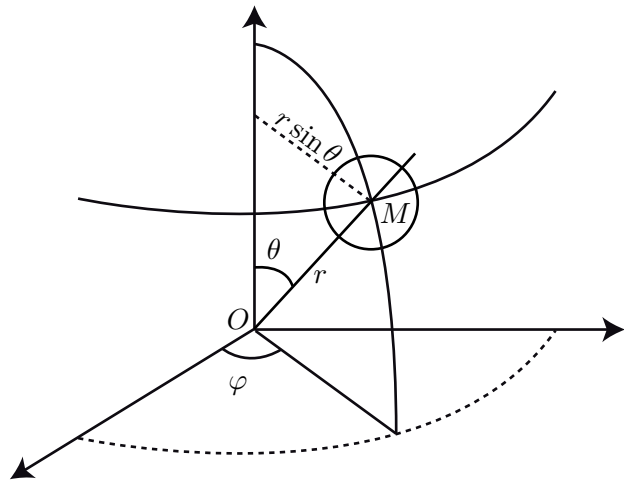
2.2 Surfaces élémentaires



2.3 Volume élémentaire

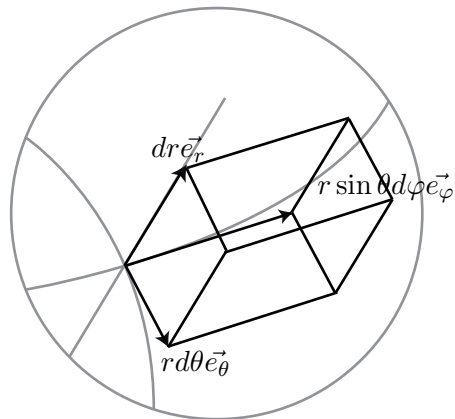
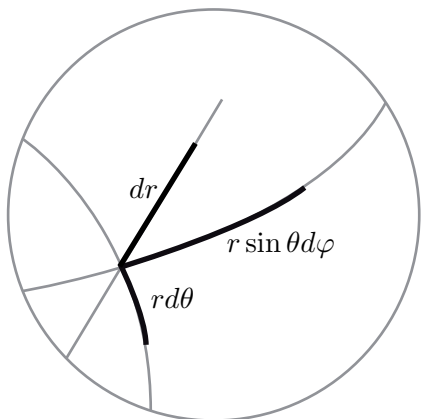


3 Coordonnées sphériques

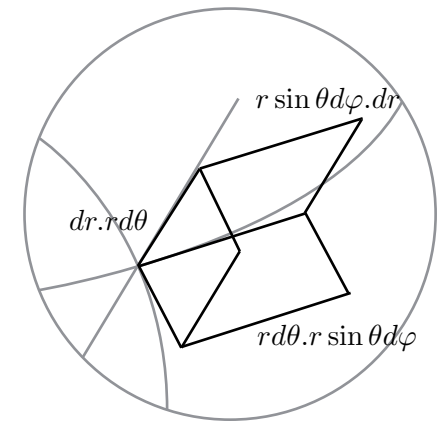
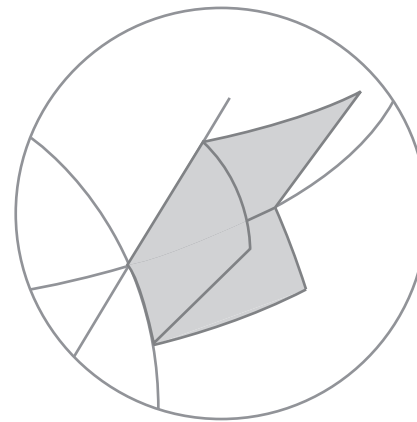


$$d\mathbf{OM} = dr \mathbf{e}_r + r d\theta \mathbf{e}_\theta + r \sin \theta d\varphi \mathbf{e}_\varphi$$

3.1 Longueurs élémentaires



3.2 Surfaces élémentaires



3.3 Volume élémentaire

