

From Griffiths: 6.1, 6.3, 6.6, 6.7, 6.9,

1. A uniformly magnetized sphere has a total magnetic moment of $\frac{4}{3}\pi a^3 \vec{\mathbf{M}}$, where $\vec{\mathbf{M}}$ is the magnetization and a is the radius. calculate the equivalent surface currents that can replace this sphere as far as external fields are concerned. Show that this current distribution has the same total magnetic moment as the magnetized sphere.