**Source 1:** Design of Attitude Control Systems for CubeSat-Class Nanosatellite  
[https://www.hindawi.com/journals/jcse/2013/657182/]

This source gives the following equation for the dipole moment generated:

With , the demagnetizing factor, is described by:

In the above equations, D is the dipole moment, is the core radius, V is the voltage, is the resistivity of the wire, is the relative magnetic permeability of the core material, and is the core length.

**Source 2:** Spacecraft Attitude Determination and Control (James R. Wertz)

This source gives the following equation for the dipole moment generated:

Where is the permeability of the core material N is the number of turns in the coil, I is the current through the coil, and A is the cross-sectional area of the coil.

**Source Comparison:** Starting with the equation from source 1, we need to show that it will yield the same results as the