

## 8.5 - Magnetic Field of the Earth

PJ Gibson - Peace Corps Tanzania

May 2020

- (1999) A flat coil of 100 turns and mean radius 5.0 cm is tying on a horizontal surface and is turned over in 0.20 sec. against the vertical component of the Earth's magnetic field. Calculate the average e.m.f. induced.
- (2007) Write short notes on the following terms in relation to changes in the Earth's magnetic field: long-term (secular) changes, short-period (regular) changes and short-term (irregular) changes.
- (2013) An aircraft is flying horizontally at 200 m/s through the region where the vertical component of the earth magnetic field is  $4.0 \times 10^{-5}$  T. If the air craft has a wing span of 40 m, what will be the potential difference (p.d.) produced between the wing tips?
- (2015) List down three sources of earth's magnetism.
- (2016) State any three magnetic components of the earth's magnetic field.
- (2016) The horizontal and vertical components of the Earth's magnetic field at a certain location are  $2.7 \times 10^{-5}$  T and  $2.0 \times 10^{-5}$  T respectively. Determine the Earth's magnetic field at the location and its angle of inclination  $i$ .