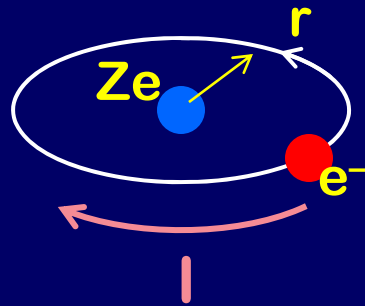


Transition elements

In 3d shell we are putting electrons into $\ell = 2$; all atoms in middle are strongly magnetic. Why?

Use Bohr model:



This looks like a current loop!

Recall torque on current loop from B-field: $\tau = IAB\sin(\phi)$

$$I = -e/T \quad T = 2\pi r/v = 2\pi r/v = 2\pi m/p \quad A = \pi r^2$$

$$IA = -ep/(2\pi m) (\pi r^2) = -(e/2m)rp = -(e/2m)L$$

High angular momentum



Strongly magnetic!

Angular momentum!