

Well, in response to my second post.

If the rotor was operating in a vacuum (without aerodynamic forces), the flapping equation has a general solution as the following:

$$\beta = \beta_{1c} \cos \psi + \beta_{1s} \sin \psi$$

Where

$\beta$  Blade flapping angle positive up

$\beta_{1c}$  Longitudinal flapping angle

$\beta_{1s}$  Lateral flapping angle

$\psi$  Azimuth angle

With the absence of aerodynamic force the rotor will take up an arbitrary orientation in inertial space thus in effect *acts* like a gyroscope. Key word being acts.

Ref:

Leishman, J.G. (2006). Principles of helicopter aerodynamics. NY: Cambridge University Press