



The diagram shows a semi-circular region on the left, shaded in light gray, representing a solid body. The boundary of this region is a curved line. To the right of this boundary, the space is filled with a light blue background. A series of red curved lines, representing magnetic field lines, originate from the boundary and curve upwards and to the right. Below the boundary, a series of purple curved lines, also representing magnetic field lines, curve downwards and to the right. The boundary itself is labeled with the equation $r = R$. Inside the gray region, the equation $\nabla \times \mathbf{B} = 0$ is written. To the right of the boundary, two equations are stacked: $\mathbf{B} \times \nabla \times \mathbf{B} = 0$ and $\mathbf{E} + \mathbf{v} \times \mathbf{B} = 0$.

$$\nabla \times \mathbf{B} = 0$$

$$r = R$$

$$\mathbf{B} \times \nabla \times \mathbf{B} = 0$$

$$\mathbf{E} + \mathbf{v} \times \mathbf{B} = 0$$