

Paul Adrien Maurice Dirac 1902-1984

Britany

Nobel 1933

Fermi-Dirac statistics for fermions.
Complement Pauli exclusion
principle for electrons.

Dirac equation: $(i\partial - m)\psi = 0$

Extended Schroedinger's equation to relativistic cases.

$$\hat{H}_{\text{Dirac}} = \gamma^0 [c\boldsymbol{\gamma} \cdot (\hat{\mathbf{p}} - q\mathbf{A}) + mc^2 + \gamma^0 q\phi]$$

Dirac's matrix for two spin states:

$$\gamma^0 = \begin{pmatrix} I_2 & 0 \\ 0 & -I_2 \end{pmatrix}, \gamma^1 = \begin{pmatrix} 0 & \sigma_x \\ -\sigma_x & 0 \end{pmatrix}, \gamma^2 = \begin{pmatrix} 0 & \sigma_y \\ -\sigma_y & 0 \end{pmatrix}, \gamma^3 = \begin{pmatrix} 0 & \sigma_z \\ -\sigma_z & 0 \end{pmatrix}$$

