

# Relativistic Quantum Mechanics

## Problem Sheet 4

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### Spin- $\frac{1}{2}$ particle scattering

1. Calculate the spin averaged amplitude squared ( $\overline{|\mathcal{M}|^2}$ ) for the process  $e^+e^- \rightarrow e^+e^-$  and in the high energy limit express the result in terms of Mandelstam variables.

*Hint: include both diagrams*

[10]