HM

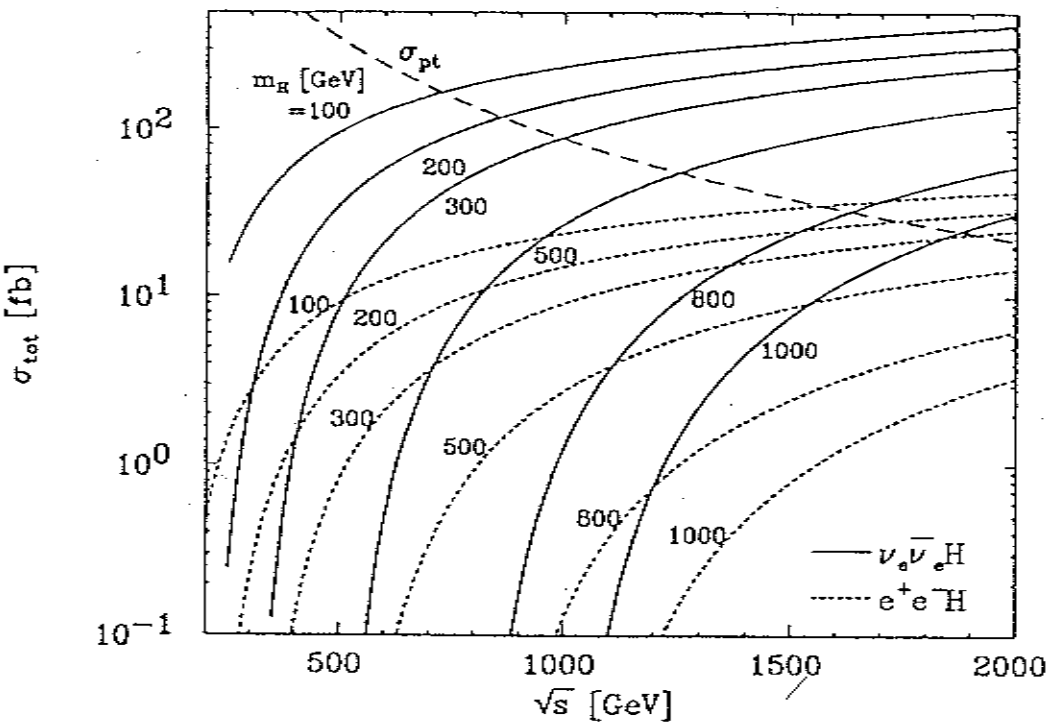

Figure 5.6: Total cross sections of the processes $e^+e^- \to \nu_e\bar{\nu}_e H$ and $e^+e^- H$ for various m_H.

important clue from the simple two-body kinematics, that the energy of the Z-boson is completely fixed to be

$$E_Z = \frac{\sqrt{s}}{2}\left(1 + \frac{m_Z^2}{s} - \frac{m_H^2}{s}\right), \tag{5.3}$$

which can appear as a peak in the E_Z distribution even with the decay of the Higgs boson.

5.2.2 $e^+e^- \to \nu_e\bar{\nu}_e H$, $e^+e^- H$