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Max precision with which can
measure $E = 120 \text{ MeV}$
 $\Delta E = 120 \text{ MeV}$

~~Max~~ ΔE is a minimum because

$$\Delta E \Delta t = \hbar$$

Δt is lifetime (imposes limit on energy measurement)

$$\text{So } \frac{\hbar}{\Delta E} = \Delta t = \frac{4.136 \times 10^{-15} \text{ eV s}}{120 \times 10^6 \text{ eV}}$$

$$\frac{4.136 \times 10^{-15} \text{ eV s}}{1.2 \times 10^8 \text{ eV}}$$

$$= 3.44 \times 10^{-23} \text{ s}$$