

# Summer School on Particle Physics

| Three Generations of Matter (Fermions) |                              |                            |                            |                     |               |
|--|------------------------------|----------------------------|----------------------------|---------------------|---------------|
|  | I                            |                            | II                         |                     | III           |
| mass                                   | 2.4 MeV                      | 4.2 MeV                    | 171.2 GeV                  | 0                   | 0             |
| charge                                 | $\frac{2}{3}$                | $\frac{2}{3}$              | $\frac{2}{3}$              | $\frac{1}{3}$       | $\frac{1}{3}$ |
| spin                                   | $\frac{1}{2}$                | $\frac{1}{2}$              | $\frac{1}{2}$              | $\frac{1}{2}$       | $\frac{1}{2}$ |
| name                                   | u<br>up                      | c<br>charm                 | t<br>top                   | $\gamma$<br>photon  |               |
|  | d<br>down                    | s<br>strange               | b<br>bottom                | g<br>gluon          |               |
|  | $\nu_e$<br>electron neutrino | $\nu_\mu$<br>muon neutrino | $\nu_\tau$<br>tau neutrino | $Z^0$<br>weak boson |               |
|  | e<br>electron                | $\mu$<br>muon              | $\tau$<br>tau              | W<br>weak boson     |               |

Contribution ID: 14

Type: not specified

## Exercises and discussion

Monday, 23 July 2018 14:00 (3 hours)

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