List of physical processes that cannot be handled by PHITS

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- ✓ Criticality calculation
- ✓ Interaction between two (or more) moving particles (e.g. Simulation for particle collision experiments)
- ✓ Effect of electric fields generated by radiation (e.g. Laser acceleration of particles, plasma)
- ✓ Electron-induced nuclear reactions via virtual photon production
- ✓ Transport and generation of photons below 1 keV (e.g. Cherenkov light, synchrotron radiation, luminescence)
- ✓ Transport and generation of electrons below 1 keV*
- ✓ Physical processes related to electron current (e.g. electron avalanche)
- ✓ Charge exchange interactions*
- ✓ Event-by-event analysis of atomic excitation and ionization*
- ✓ Polarization effect**
- ✓ Chemical reactions (e.g. Transport and generation of radicals)
- ✓ Biological reactions (e.g. Generation of DNA damage)
- ✓ Change of chemical and material profiles after irradiation (e.g. time evolution of defects)
- ✓ Consideration of the status of a material*** (e.g. crystal & molecular structure, temperature)
- ✓ Nuclear reactions originated from fine structure of nuclear shell*** (e.g. Li(p,n) reaction)
- ✓ Particle-induced X-ray emission (PIXE)
- ✓ Generation of delayed neutrons

* Feasible when the track-structure mode is used

** Feasible in the simulation of nuclear florescence resonance (NRF)

*** Feasible when the nuclear data library is used