

# Proposal for a new “physicslists” category in extended examples

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# Proposal since Okinawa CM

- We would like to have a more uniform approach how to define a physics list in “physics examples”
- We proposed the approach of a **modular physics list from Geant4 builders** or builders provided with the example or both
- And add a **dedicated set of examples** (could be in a new “physicslist” category)
- Demonstrate all approaches for how to define a physics list
  - `different main( )`
  - `same simple application classes will be shared (geometry, particle gun, scoring, etc)`

# Candidate Examples

- **examples/extended/hadronic/Hadr00**
  - This example demonstrates a usage of **G4PhysListFactory** to build Physics List and G4HadronicProcessStore to access cross sections.
- **examples/extended/hadronic/Hadr05**
  - This example demonstrates the usage of G4GenericPhysicsList to build the concrete physics list at the run time.
- **tests/test38**
  - Test of new G4PhysListFactory, simplification will be needed to make it accessible to G4 users

# Examples & Documentation

- The new examples would be coupled with the documentation
- Actually we have no section in Application Developers Guide dedicated to physics lists
  - In section "2. Getting Started with Geant4 - Running a Simple Example", there is no mention of pre-packaged physics lists, but application developers are invited to define their physics list class derived from `G4VuserPhysicsList`
- It would be particularly nice (and somehow a first) that we have a dedicated guide (or chapter therein) which is demonstrated with a concrete example
- The physics list example category would be an opportunity to demonstrate and keep up to date the reference, modular and factory PhysicsList designs
  - *We would need input from all people concerned!*