

## Computational Challenges for (Present and) Future Projects

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The ROXIE program is being developed at CERN in order to meet the special requirements and challenges in the electromagnetic design of accelerator magnets. We speak about computational challenges, for example in quench-simulation for high-field magnets, or in time-transient simulations of fast-ramping magnets. Many of the applications, relevant for future projects require a 3-D and/or multiphysics approach that pushes most existing codes to their limits.