

**Ideas for a journal (and books) on  
“Computing and Software for Big Science”**



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## A first slide on what I do at Springer

- Publishing Editor of EPJ C (Particles and Fields)  
[+ Editorial Representative for Springer @ SCOAP3 , EPJC + JHEP]
- Publishing Editor of EPJ A (Hadrons and Nuclei)
- Publishing Editor of Lecture Notes in Physics
- Other book series like
  - Particle Acceleration and Detection
  - Complex Systems
  - Science and Fiction

## First ideas ...

... arose when Günter Quast (KIT) gave an inspiring talk at a particle physics conference in Mainz in 2013.

From discussions thereafter, also at CERN, emerged first ideas for a textbook on fundamentals, and then a journal on „HEP Computing“

> Textbook: the proposal and outline still exists. The problem (as so often) remains to find lecturers with enough time to write a chapter.

> Journal: refereed, abstracted and indexed, Impact Factor (needs 2 years)

- academic aspects and career paths in the field (physicists)
- authoritative and central reference and archive
- positive feed-back loop on the dynamics and visibility of a community

## Present status: journal title and aims

➤ **Title: Computing and Software for Big Science**

➤ **Aims:**

This peer-reviewed journal is dedicated to the publication of high-quality material originating from the collective effort by the scientific community to address the special and ever more demanding computing and software needs of the future.

At its core will be particle, astro-particle and nuclear physics, as well as observational astronomy and cosmology, or high-brilliance light sources - fields in which experimental research is increasingly organized in large and global collaborations around large-scale instruments with huge output of data, and typically operating at the very frontier of energy, intensity and detector technology.

Facing similar challenges ranging from data reduction, via data sharing, to increasingly data-driven modeling of different facets of the same physical universe, the scientific community requires fundamental and novel concepts for large-scale and collaborative computing and software development, as well as novel algorithms and techniques for data processing.

## journal scope

- > **infrastructures** for large-scale, high-throughput computing
- > related **software** and development Infrastructure
- > **middleware** development
- > data **processing, hosting and sharing**
- > novel **algorithms** for efficient data reconstruction and filtering
- > software **Benchmarking** and Performance Assessment
- > **frameworks** and software integration
- > Online/Offline **data quality** monitoring
- > Distributed **data analysis**
- > **Deep learning** algorithms
- > Event and object **classification**
- > Data **visualization**

## journal structure

### Scientific Advisory Board:

Eckhard Elsen (CERN), Matthias Kasemann (DESY),...

### Editors-in-Chief:

Günter Quast (KIT)

Markus Elsing (CERN)

N.N. (astroparticle physics)

cf Towards a Model for Computing in European Astroparticle Physics (arxiv: arXiv:1512.00988)

### Editorial Board (15-20 editors)

### Article Types:

no letters, regular articles, reviews, advanced tutorials (e.g. from schools), „no proceedings“ (but special issues possible)

### Volume structure:

one annual volume/issue, papers published continuously with a manuscript number.

## journal business model

It will start as hybrid journal and, if possible, submitted for conversion to full OA in the next SCOAP3 phase (discussions already underway).

### Timeline till launch:

As soon as the third EiC is appointed we invite the editorial board and complete the journal set-up (manuscript management system, homepage,...)

~ approx. timeline: late fall 2016

Papers can then be submitted as of late 2016  
First papers perhaps in spring of 2017.