Part of SPRINGER NATURE

Robots as virtual diving buddies

Springer Data and Software Policies for Astrophysics Journals

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Summary in less than 2 minutes

- Speaking for Springer astronomy journals, in particular
  - Computational Astrophysics and Cosmology
  - Living Reviews in Computational Astrophysics
- Journals request from authors
  - Transparency and reproducibility of results
  - Make your data and (benchmarks of) codes available to the journal and to readers
  - Make your data and software citeable
- Recommendation for editors
  - Request authors to make their data and (benchmarks of) codes available to the journal and to readers
  - Review codes

But it turned out I have more than 2 minutes

A few details

- Journal encourage authors
  - Transparency and reproducibility of results presented in an article
    - Appendix providing relevant information on the source code used for the research described in the manuscript
  - Make your data and (benchmarks of) codes available to the journal and to readers
    - Append codes, data and **FITS** files to the article as **Electronic Supplementary Material**
    - Use **alternative repositories** like CDS, ASCL or FigShare
  - Make your data and software citeable
    - Get a **DOI** from your repository
    - Register them **with ASCL**
- Recommendation for editors
  - Request authors to make their data and (benchmarks of) codes available to the journal and to readers
  - Review codes

Challenges

- **How to execute this policy?**
- Authors often not willing to share software and data
- Editors often not willing / determined to execute policy
- Unclear software / data citation standards
- How to peer review software?
  - Standards for software documentation?
  - Standards for presenting how results were obtained?
  - Standards for how data and software is made available?
  - Standards for how to peer review software? Effort for referees?
- Usefulness of reproducibility of figures based on author‘s data and data analysis /graphics software
- Initiative for accepted standards must come from the astronomical / computational astrophysics community
- Help from publisher
  - http://www.springernature.com/gp/authors/research-data-policy

Thank you

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The story behind the image

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Robots as virtual diving buddies

OceanOne is a bimanual underwater humanoid robot that has been developed by Oussama Khatib and his team at Stanford University, With guidance from a team of deep sea archaeologists the robot explored the wreck of La Lune, the flagship of King Louis XIV that sank in 1664, and skilfully recovered a small vase and returned it to the ship deck safely. Based on the success of this maiden voyage, the hope is that the robot will one day take on highly skilled underwater tasks too dangerous for human divers and open up a whole new realm of ocean exploration.

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