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Towards FAIR principles in mathematical research data

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FAIR – short for findable, accessible, interoperable and reusable – is the guiding principle in Research Data Management (RDM). While this is comparatively easy to achieve for classical pen-and-paper proofs where everything boils down to a publication and the references needed to verify the proof, the situation is much more complicated in settings that require computer experiments, and when interdisciplinary goals are pursued. With a proper underlying RDM, mathematicians would be able to find application domains and "real-world" test data for their work more easily, while on the other hand, practitioners from various other disciplines would benefit directly from links to "better-than-textbook" mathematical approaches to solve the problem at hand. This talk will give an overview of the goals and visions of the multi-million large-scale German National Research Data Initiative (NFDI), and provide non-trivial examples from the MaRDI (Mathematical Research Data Initiative) consortium within the NFDI that highlight how standardization of data exchange across disciplines and within Mathematics can be achieved. The talk concludes with a sketch of the Knowledge Graph that is being built to represent all this, in a human- and machine-searchable fashion, and a call for participation.

REFERENCES

[1] https://www.nfdi.de/?lang=en

[2] https://mardi4nfdi.de/