

HDF5 File Format

[Hierarchical Data Format Version 5 \(HDF5\)](#) is designed to store and organize large amounts of data. Developed by the U.S. National Center for Supercomputing Applications it has since found use across many scientific fields.

The format continues to be supported by the HDF group, a non profit organization dedicated to the production and maintenance of the open source format.

HDF supports easily supports n-dimensional datasets, is a portable self describing format with no vendor lock in. This will facilitate users taking greater control of their own data, allowing them full access to the data collected without the need for any additional applications.

HDF5 in Biomechanics

ISB, ESB, ESMAC, GCMAS, and ASB [Guidelines for Open Data Sharing in the Human Movement Sciences](#):

“The choice of file format is a fundamental yet frequently overlooked consideration that directly impacts the findability, interoperability, and long-term reusability of shared human movement datasets... In this regard, the Hierarchical Data Format version 5 (HDF5) merits particular attention as a candidate for standardized data exchange in the human movement sciences.”

Working With HDF5

HAS-Motion Documentation

Here is a doc detailing our implementation of the HDF5 format. The latest version is **v0.0.1** (as of 8/20/2026).

What's New

- Version number is now tracked at the root group level, making version information easier to access and manage.
- Signal data is now stored using a more appropriate data type, resulting in smaller file sizes and more efficient storage.

HDFView

The HDF Group maintains a free to use .h5 viewer named [HDFView](#).

Libraries

Several libraries exist allowing users to interface with .h5 files from an array of languages [h5py](#) for Python being the most popular.

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