
Plan Overview

A Data Management Plan created using DMPTool

Title: Experimental investigation of the dynamics of trapped non-wetting droplets subjected to the seismic stimulation in constricted tubes

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Experimental investigation of the dynamics of trapped non-wetting droplets subjected to the seismic stimulation in constricted tubes

Data Collection

What data will you collect or create?

We provide our original recorded .cine data files of the partial tracked data point files using Phantom high speed camera with all three kinds of non-wetting droplets (Hexane, Decane, Dodecane) at two aspect ratios (9,4.5). The total is 60 files with volume of 148 GB.

How will the data be collected or created?

The data were collected by using the Phantom Camera Control (PCC Version 3.4.787.0) software belongs to Phantom high speed camera. The data files were collected based on the types of the three droplets types and two tube aspect ratios under frequencies of 10-50 Hz (interval:10 Hz). The folder structures are as below: two aspect ratios, oscillation and mobilization, droplets types, .cine video files under different frequencies.

Documentation and Metadata

What documentation and metadata will accompany the data?

All data points were partially collected since we only need several periods of vibration to compare with the theoretical results. More points from any interested places in the video can be manual or auto-tracked in the software. The number of data point in each file is different because of different frequencies and acceleration amplitudes. At least data points of three or four periods of vibration were collected to ensure a good comparison with theoretical results.

Ethics and Legal Compliance

How will you manage any ethical issues?

All researchers interested in our topic will be allowed to use and cite our data for their research purposes. However, they can only use for their own research use and not allowed to disseminate the data to others without permission of the data owners.

How will you manage copyright and Intellectual Property Rights (IP/IPR) issues?

The copyright of the data belongs to the authors of the publication.

Storage and Backup

How will the data be stored and backed up during the research?

We would like to use automatic backup services provided by MST IT services!.

How will you manage access and security?

The data is open access to the public.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

All 60 data files are of long-term value and should be retained. The data files are of high reusability and benefits the researchers and readers for further investigation. The data will be and remain publicly available via the Missouri University of Science and Technology's institutional repository, Scholars' Mine, an open-access digital archive for the scholarly output of the Missouri University of Science and Technology community. This institutional repository is part of the Digital Commons network of repositories and provides a perpetual archive, indexed by major search engines. The data and metadata are managed by professional librarians, with technical assistance from information technology professionals. Users will be asked to provide appropriate attribution (see <https://www.datacite.org/services/cite-your-data.html>) if any of the data is used.

What is the long-term preservation plan for the dataset?

The long-term strategy for maintaining, curating, and archiving the data involves depositing it in the Missouri University of Science and Technology institutional repository, Scholars' Mine, for long-term preservation and to ensure that the research community has continuing access to the data. Scholars' Mine provides a perpetual archive, indexed by major search engines, follows accepted backup and archival practices, and is managed by professional librarians with technical assistance from information technology professionals.

Data Sharing

How will you share the data?

The data will be and remain publicly available via the Missouri University of Science and Technology's institutional repository, Scholars' Mine, an open-access digital archive

for the scholarly output of the Missouri University of Science and Technology community. This institutional repository is part of the Digital Commons network of repositories and provides a perpetual archive, indexed by major search engines. The data and metadata are managed by professional librarians, with technical assistance from information technology professionals. Users will be asked to provide appropriate attribution (see <https://www.datacite.org/services/cite-your-data.html>) if any of the data is used.

Are any restrictions on data sharing required?

No restrictions on data sharing required.

Responsibilities and Resources

Who will be responsible for data management?

The authors of the publication would be responsible for data management.

What resources will you require to deliver your plan?

None.