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An international team to create reference models and data sets for Moon seismology

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The seismological data of Apollo missions were processed almost continuously during the past 40 years. This example of planetary data processing is unique for planetary science by its duration and the important results obtained over the years. It is currently driving many rules in planetary data collection and archiving.
A consequence of such a long and continuous data processing is the availability of many internal structure models and many processed data sets (level 2 or 3). The processed data sets are not always publicly available and there is no general agreement on the error bars of both processed data and internal struucture models.

We present here the work performed by an internal team on Moon seismology which gathered with the support of ISSI Bern and Beijing.
Our goal is to provide to the scientific community the following elements:
- processed data sets and an analysis of their error bars
- internal structure models produced by using these processed data sets and up to date a priori information
- an analysis describing what we know and what we don't know about the internal structure of the Moon, in order to support and drive future seismological deployments

We will present the review work of a priori information and internal structure models, and the preliminary analysis of processed data sets (travel times, deep moonquake stacks...) performed up to know. The strategy for data analysis and reference model production will also be presented. We conclude on our statement to support future lunar internal geophysics missions.