**Motivation**

"Improve measurement accuracy of geo-neutrino to understand internal structure of the Earth"

- Anti-neutrino is generated in the Earth’s interior

**Large Detector**

- Geo-neutrino is separated from reactor-neutrino

**Small Detector**

- Principle inspection of directional measurement application to reactor monitor

**Li Liquid Scintillator (LiLS)**

- Dissolved $^6$Li in LS

**Developing Imaging Detector**

- "We produced two optics" → evaluated these optics and checked individual differences

**Property**

- Design of Optics

**Analysis**

- Typical value to separate two vertex points (Requirement)

**Summary & To do**

- Two optics reproduce the design and have enough performance (under requirement)
- There are not individual differences
- We will think about a better method to analyze
- We will try to use the optics for other experiment

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**Deformation Evaluation of Mirror for Imaging Detector**

**Research Center for Neutrino Science, Tohoku University, Keigo Soma**

**Example: $Z=150$**

**Selection of image**

$$ R^2 = \frac{\sum (x_i - \bar{x})^2 + (y_i - \bar{y})^2}{\sum z_i} $$

**Image**

- Image’s shape is nearly consistent
- It’s spread is slightly larger than the simulation results
- Image is distorted

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