

Part 2



Objective: Image Analysis of Tsunami Sand and Characterization.

Advantages:

Optical Imaging Technique can complement the traditional Sieving method as it is Fast, Simple and Accurate.

Analysis Possible: Shape, Size, Color.....

Characterization of Grain Size less than 75 μm (Sieve Limit) is easily done (10 μm in present analysis).

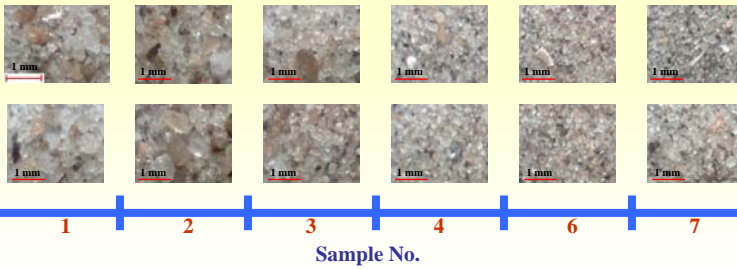
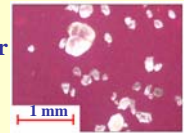


Image Analysis Procedure

Particles Color Image



Particles Grey Scale Image

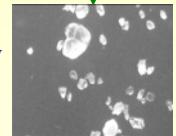


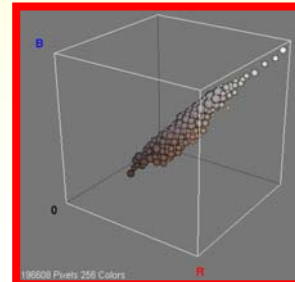
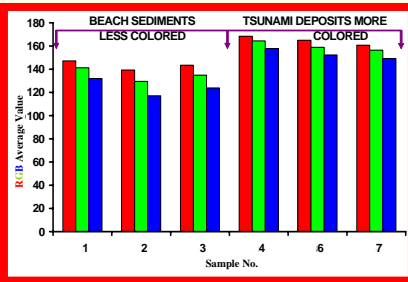
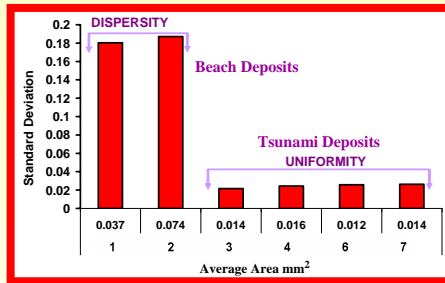
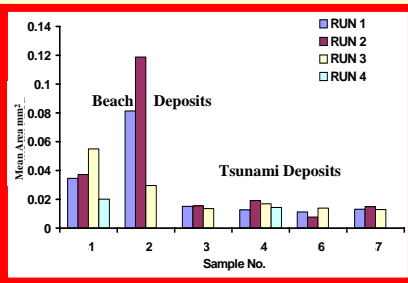
Image After Threshold



Result After Particle Count Filter



Results of Image Analysis of Tsunami Sand Particles



RGB:
Shows the color distribution in RedGreenBlue cube

RGB Distribution Profile

Observation:

Sediment Type A (beach sediments or mixtures):

- Bigger Particle Size.
- More Dispersity.
- Less Colored.

Sediment Type B (tsunami deposits):

- Finer Particles.
- Uniformity in size distribution.
- More Colored Particles.

Conclusions:

The characterization by means of traditional and optical image analysis techniques of recent Tsunami deposits from Phra Phat Bay was carried out.

- Tsunami deposits can be clearly distinguished from beach sediments or mixtures.
- Tsunami deposits consists of substantially finer particles
 - Seem to be more spherical
 - Preliminary results suggest these deposits are richer in color

Further investigation needs to be carried out to better characterize fine-grained tsunami deposits so that eventually the results can be standardized for tsunami deposit characterization and modeling.