**THE EFFECT OF AZIMUTH AND ANGLE OF THE SUN ELEVATION**

**TO IMAGE CLASSIFICATION OF LANDSAT-7**

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**ABTRACT**- Landsat imagery is one that uses a passive sensor system, which uses the energy of sunlight as energy source. Therefore the interpretation of Landsat imagery is influenced by atmospheric conditions, direction of azimuth and elevation angle of the sun recording. It has an impact on the level of brightness of the image in the image classification process.

By conducting experiments on Landsat imagery Bogor municipality, using image processing software, the changes azimuth of 0 °, 90°, 180 ° and 270°, and changes in solar elevation angle of 30 °, 45 °, 60 °, 75 ° and 90 °, it will provide a level of brightness different image as much as 21 kinds of couples sun azimuth and elevation angles. Of 21 kinds of couples sun azimuth and elevation angles, only 12 kinds of couples that are acceptable by the standards of the United States Geological Survey Agency (USGS), where the Kappa value accuracy should be greater than 85%.In this experiment, the Kappa index ranged from 85.3% to 94.3%.

The final results of this experiment showed that at azimuth 90 ° and 45 ° solar elevation angle showed images with the best image brightness level.

**Keywords:** Landsat, classification, azimuth, elevation angle of the sun, the brightness level.