

Monitoring emission through GOSAT over Indonesian area

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The Greenhouses Gases Observation Satellite (GOSAT) is a spacecraft that launched on January 23, 2009 aimed to monitor the dynamics of greenhouse gases in the earth's surface. GOSAT spatially measures carbon flux (including CH₄ and aerosols) in the regional to continental level and temporal scales from synoptic to interannual. This can be exploited to gather new knowledge about the global distribution and temporal variation of greenhouse gases will also be able to know at the same time the global carbon cycle and its influence on climate. GOSAT can also potential be used to predict future climate change and its impact through developing a new methodology for the measurement of greenhouse gases. This study aimed to monitor GHG emission over Indonesian area by coupling with relevant data (hot Spot, wind, etc). Based on the initial analysis represents that the raising trend of both CO₂ and CH₄ concentration occurred since 2009 until June 2012 over Indonesian area. Even if the trend after June 2011 represents the slight slump, yet the general trends indicate the increase form. Based on the analysis as well they depict that the occurrence of hot spot (forest fire) have correlation with the raising trend of CO₂ and CH₄. In general phenomena and based the historic data during this time, the hot spot usually achieve the peak condition in dry season. The field condition during that time implies the direct or indirect correlation with distribution concentration of CO₂ and CH₄ during the July (2009, 2010 and 2011). This condition is not so much severe during January (2009, 2010 and 2011), where the rain fall was still high (rainy season). For the near future analysis, the uncertainty of the actual source of emission need more investigation and prove based by coupling with historical data of wind, as emission is a mix concentration (value) that come from some sources.

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