



Why Silesian cities are breathing with methane? - results of JSUN-CH4 project.

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The industrial methane released to the atmosphere is being reported to national and international data-bases. In case of Southern Poland (including Silesia area) reports contain only part of real amount of methane emitted into the atmosphere from gas distribution system and coal excavation. The concentration level of methane in lower troposphere has been observed with mobile mapping platform. One of the JSUN- CH4 project goals is to verify the location of the sources using high precision gas analysers installed in the car platform. The diurnal cycle amplitudes observed in the cities reach 10ppm in residential areas and centres of the Silesian cities. Hard coal excavation occurring in 29 facilities over Silesia region is reporting 0.5Gt CH4 yearly what affect the atmospheric level of this gas. Contrary to mining industry, gas distribution companies do not report methane leak rates from particular installations - gas pressure reduction units, compressor station and transfer lines. Also sewage utilisation station are important in city balance and are only partly reported. The most important hotspots were identified with mobile platform and sampled for stable isotopic composition. Additional eddy covariance technique was used together with dispersion plume modeling basing on direct measurements between from August 2018 till April 2019.