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# infrasound data to monitor atmospheric impacts from extra-terrestrial material

An estimated average of 54 tons of extra-terrestrial material enter Earth's atmosphere per day. If the objects are large enough they can produce very bright meteors, called fireballs. NEMO (NEar real-time MOnitoring system) will analyse fluxes and characteristics of extra-terrestrial material by globally searching for fireballs in near real-time. Ground-based networks exist for meteor/fireball observations on a local scale, but there is no world-wide database yet. By combining data we can reach the aspired coverage and maximize the amount of scientific knowledge. Social media is a fast source for world-wide information and NEMO's fast-alert-system is based on them. However, this is biased to populated areas and daytime events. The IMS (International Monitoring System) can provide information without these biases for large objects. The IMS's infrasound stations monitor our atmosphere during day and night. They can detect energy released by entering objects. With NEMO we want to improve the detection and analysis of fireballs with the IMS and explore certain automation processes to accelerate the fireball examination. Our talk will introduce NEMO and its detection procedure using the ca 4-m-sized Russian day-time fireball on 21 June 2018 as an example. This is a CTBTO, ESA, BGR, and Oldenburg University cooperation.

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