

nederlandse



natuurkundige vereniging

**Symposium 'Climate, seas and oceans'
*Current status and latest developments in modeling,
observations and processes***

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Satellite observations : why is methane so 'hot'?

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Methane is the second most important anthropogenic greenhouse gas responsible for about 1/3 of the global warming. On a per molecule basis it is a much stronger greenhouse gas than CO₂. Moreover, methane remains much shorter in the atmosphere compared to CO₂. As such, methane is a very interesting target to mitigate climate change on the short term, in addition to the need of reducing CO₂ emissions. This has been recognised at the highest political level, and as such the Methane Pledge was launched at COP26 and has been signed by over 100 countries. Its aim is to reduce the methane emissions with 30% by 2030 compared to 2020.

The challenge with reducing methane emissions lies in the fact that there are many sources of methane. The largest contributions come from oil, gas and coal exploration, livestock, landfills, rice fields, etc. And all these sources have many potential locations/infrastructure where methane can be emitted/leaking from.

Since the launch of the Dutch-ESA TROPOMI satellite instrument end 2017 we have a powerful tool in space that measures a.o. methane daily on a global scale. As such it has shown us for the 1st time the presence of many 'super emitters' of methane across the globe. However, with TROPOMI alone we can in most cases not identify the exact source responsible for the huge emissions. This is why we collaborate for example with GHGSat who operate small satellites that measure methane at 25 m resolution, but can only look at a small area at the time. So combining the two is ideal to hunt for methane leaks world-wide.