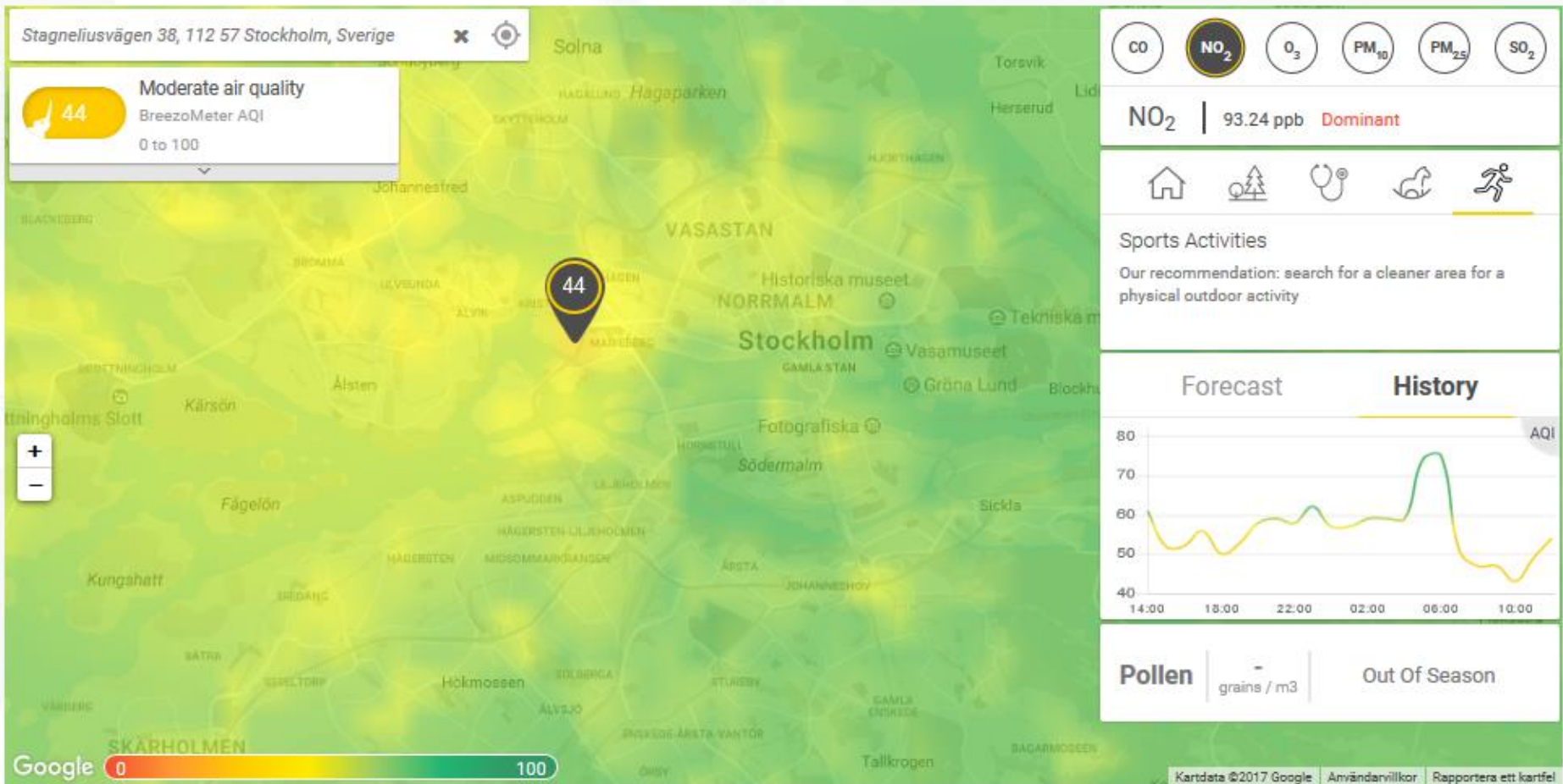


# Data & (fake) Data

Datavårdskapsträff 2017  
Sånga Säby  
2017-12-05

# Air Quality



<https://breezometer.com/air-quality-map/>

## QA for Accuracy

In addition to being limited to the exact area of the sensor station, **governmental data is what we call raw data. It isn't verified, tested or monitored. This means that it's sometimes really incorrect.**

**BreezoMeter verifies all its data source, and perform strict QA to ensure the highest level of accuracy. In addition, our proprietary models and machine learning algorithms bring our data feed quality to the next level.**

## **Do you prefer raw or right data? Models, Big Data & machine learning**

**Using big data analytics**, BreezoMeter combines data from many sources to determine ultra accurate air quality levels: While governmental monitoring stations provide hourly concentration readings for air pollution, supplementary data from satellite measurements, meteorological and traffic data, and data regarding types of land cover are added to increase the accuracy of our predictions, together with air quality models such as the European program Copernicus Atmosphere Monitoring Service (CAMS in short). Naturally, this process generates big data.

Emil Fisher, Co-founder & CTO: "Every hour we process more than 680 GB of data while calculating the air quality for more than 271 million grid points worldwide. In this process we produce 29 GB of new data every hour. In order to succeed in this mission, we use Google Cloud services to manage our data, and run hundreds of CPUs every second. Many government agencies don't have the capacity or willingness to carry out to such heavy big data analysis".

**Machine learning** is also used to enhance the readings' quality, provide forecasts and ensure BreezoMeter

<https://blog.breezometer.com/breezometer-vs-government-air-quality-5-things-to-know>



Japan's whaling fleet has killed sperm whales, such as this one that was taken in 2007, supposedly for research purposes.

Sinopix/Rex/Newscom

## Japan falsified whale hunting data in 1960s, according to study

By Virginia Morell | Jul. 14, 2015, 7:15 PM

Like fishermen, whale hunters sometimes alter the details of their catch. In the 1960s, Soviet Union (USSR) whalers illegally killed almost 180,000 cetaceans, but reported taking far lower numbers. Now, it seems that Japanese whalers in the North Pacific also manipulated their numbers around this time, according to a new study. The finding, which comes as Japan is readying to hunt whales for what it says are research purposes, raises new concerns about the country's current endeavors; it also may invalidate several past studies on whale demographics and conservation, the authors say.

<http://www.sciencemag.org/news/2015/07/japan-falsified-whale-hunting-data-1960s-according-study>

# Faked Data at the ETH

By **Derek Lowe** | September 25, 2009

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A data-fabrication scandal has erupted at a place that doesn't see many of those: the ETH in Zürich. **Peter Chen**, a physical organic chemist there, has been dealing with problems with some earlier publications (from 2000) on the spectra and ionization energies of carbon radicals. **Here's one** of the papers, which has now been retracted.

These data couldn't be reproduced, as became clear in the years after these papers came out. An investigation by the ETH showed what appears to be clear evidence of fakery – things like the background noise being exactly the same in what are supposed to be several different experimental spectra of different species. In fact, all the parties involved with the suspect papers agree that data have been fabricated – but none of them admit to having done it.

That's not a happy situation, is it? The official **ETH news release** on the topic is informative, but only up to a point. It leaves things hanging and announced that Chen is stepping down as the ETH's vice president for research. The Swiss press has picked up the story this week, though, and they're not shy about saying what the ETH doesn't seem to want to. **Here's** the Neue Züricher Zeitung *saving* (translation mine):

[http://blogs.sciencemag.org/pipeline/archives/2009/09/25/faked\\_data\\_at\\_the\\_eth](http://blogs.sciencemag.org/pipeline/archives/2009/09/25/faked_data_at_the_eth)



L'Aquila's prefecture after the 2009 earthquake.

Wikimedia Commons

## Italy's supreme court clears L'Aquila earthquake scientists for good

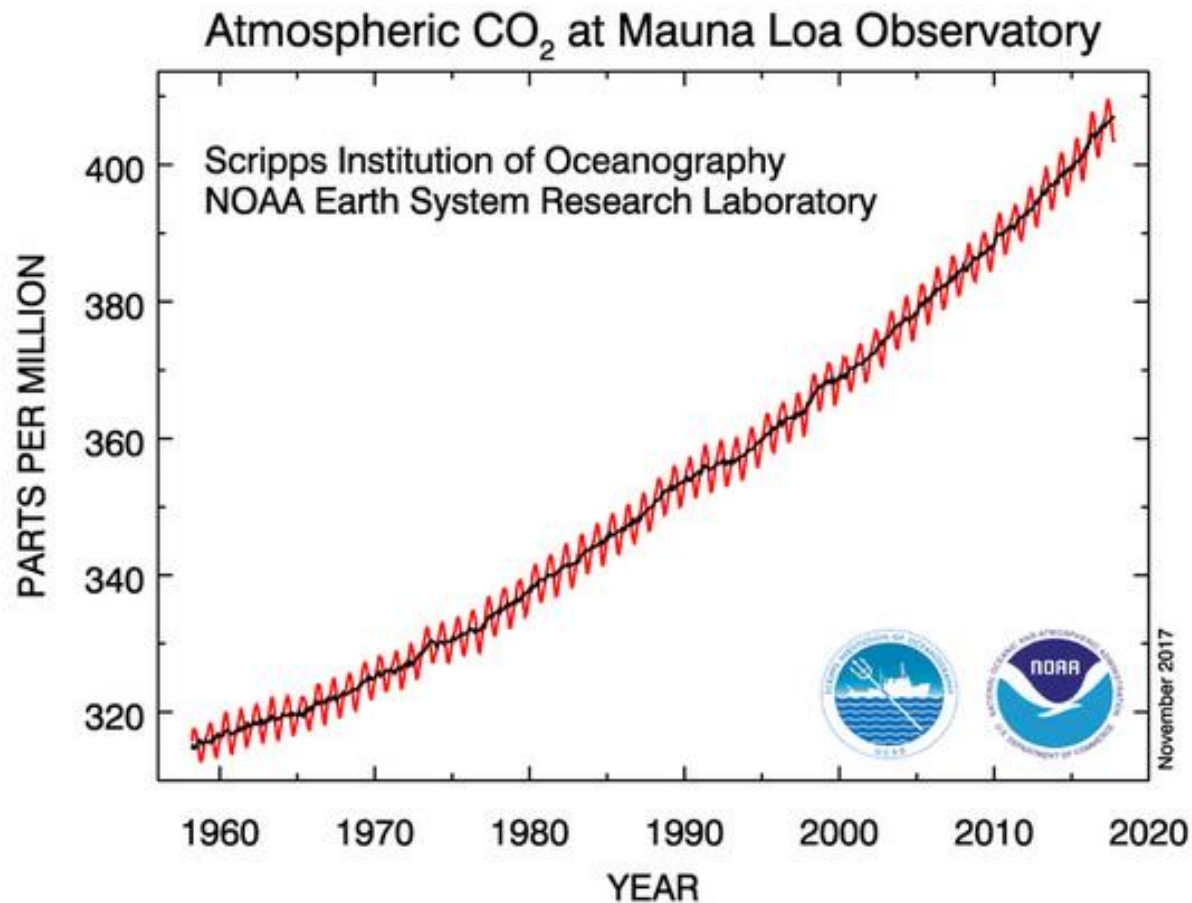
By [Edwin Cartlidge](#) | Nov. 20, 2015, 6:45 PM

Six scientists convicted of manslaughter for advice they gave ahead of the deadly L'Aquila earthquake in 2009 today were definitively acquitted by Italy's Supreme Court of Cassation in Rome following lengthy deliberations by a panel of five judges. But the court upheld the conviction of a public official tried alongside them.

The ruling marks the end of a 5-year legal process that has proven immensely controversial in the scientific world and beyond. In 2010 the seven were placed under investigation for allegedly giving

<http://www.sciencemag.org/news/2015/11/italy-s-supreme-court-clears-l-aquila-earthquake-scientists-good>

## Full Mauna Loa CO<sub>2</sub> record



<https://www.esrl.noaa.gov/gmd/ccgg/trends/full.html>

# VAD KAN VI GÖRA SOM OFFENTLIGA AKTÖRER?

- **Referenser**

- Ange källor

- **Metod**

- Skilja rådata från tolkningar

- **Reproducibilitet**

- Använd transparenta & väl dokumenterade metoder
- Uppmuntra "open science" (\*)

- **Spårbarhet**

- ?

- **Kultur**

- Bättre kommunikation
- Engagera med publiken
- Uppmuntra kritiskt tänkande
- Uppmuntra förståelse
- Tänk om drivkrafter
- Tänk om incitament
- Satsa på utbildning
- Öppenhet & transparens
- Kvalitet & ansvar

(\*) Öppna data, Öppen källkod,  
Öppen access, Öppen peer-review,  
öppen metodologi

[https://en.wikipedia.org/wiki/Open\\_science](https://en.wikipedia.org/wiki/Open_science)