



Ambient  
Air Quality Monitoring

# Atmospheric Stability Monitoring

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The concentration of air pollution at ground level is depending on how much pollution that is emitted and the stability of the atmosphere.

The stability of the atmosphere can be expressed as the mixing height. A stable atmosphere has a low mixing height with high levels of pollution at ground level. An unstable atmosphere has a high mixing height and low pollution level.

To measure the mixing height is difficult and requires advanced meteorological equipment.

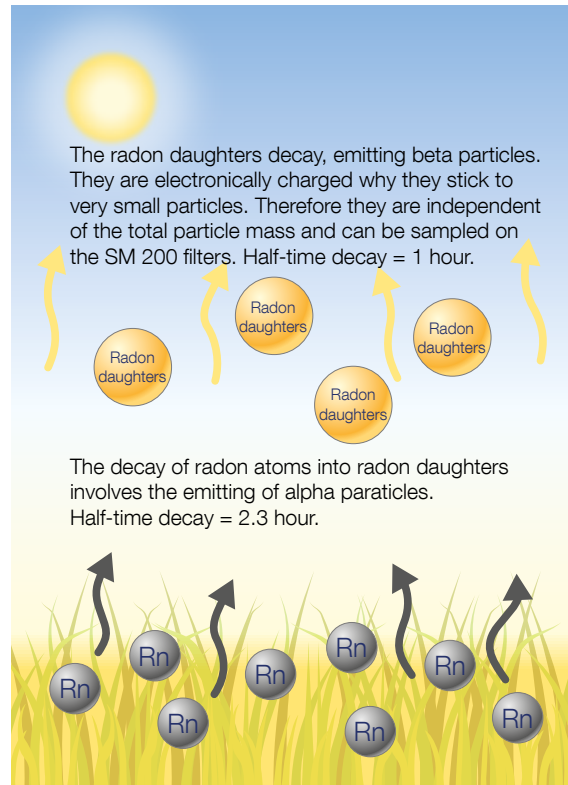
## THE OPSIS SM200

The OPSIS SM200 stability monitor is different and provides the user with an accurate analyser that will operate with a minimum of maintenance.

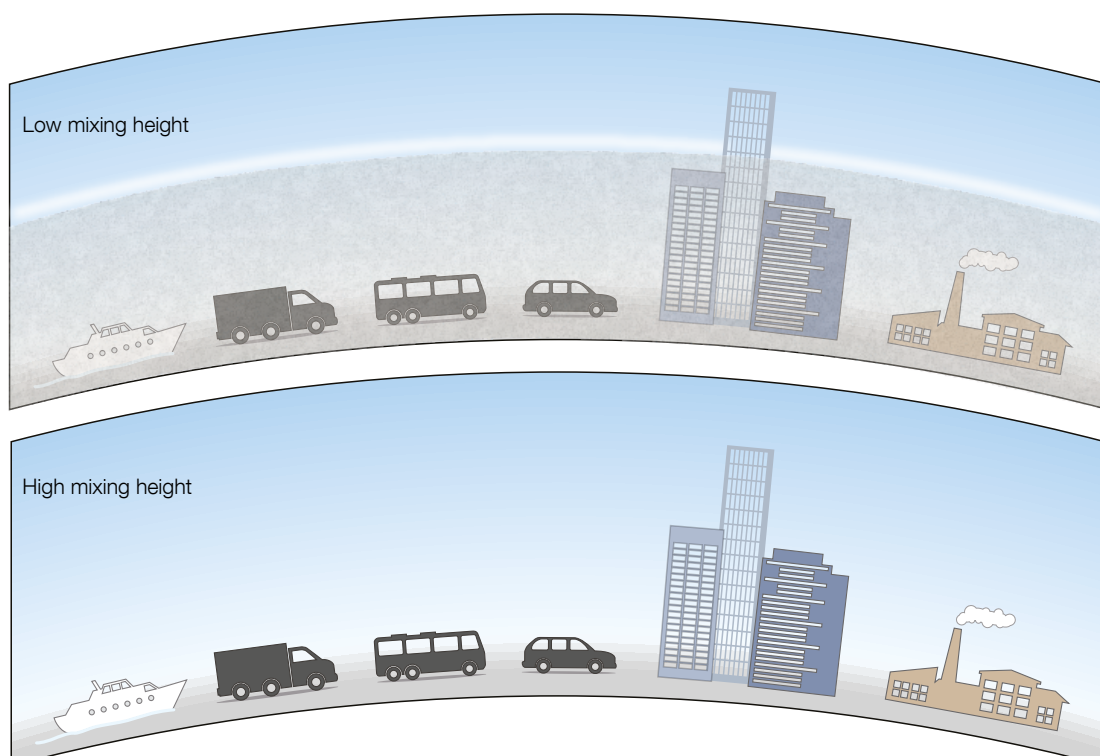
The stability of the atmosphere is measured using natural emission of radon gas from the earth.

The emission rate of radon gas is approximately constant for a specific area. The concentration of radon gas at ground level is directly related to atmospheric stability and mixing height.

For further information, please visit [www.opsis.se](http://www.opsis.se).



A schematic drawing of the creation of radon daughters

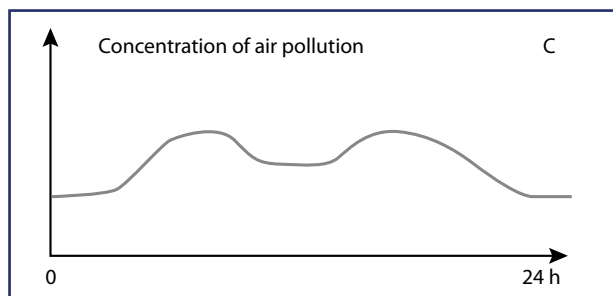
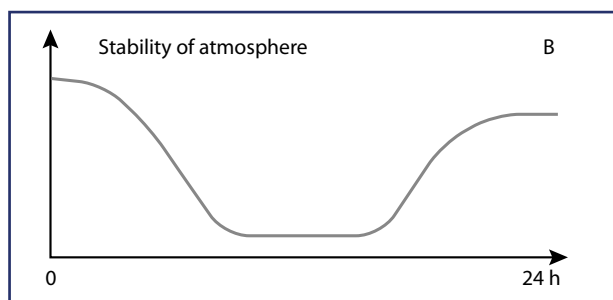
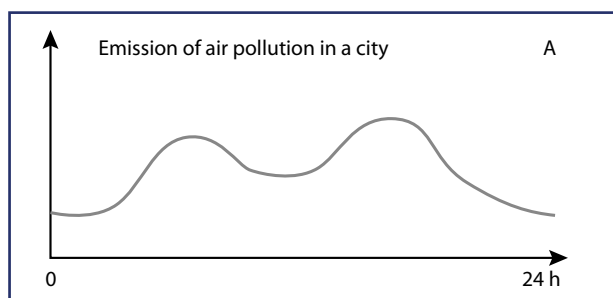


## APPLICATION 1

To understand short time variations of air pollution.

### DIAGRAM SHOWS

- A** The emissions of air pollution in a time series of 24 hours.
- B** The atmospheric stability during the same time.
- C**  $A \times B$  is the resulting time variation of concentration at ground level.

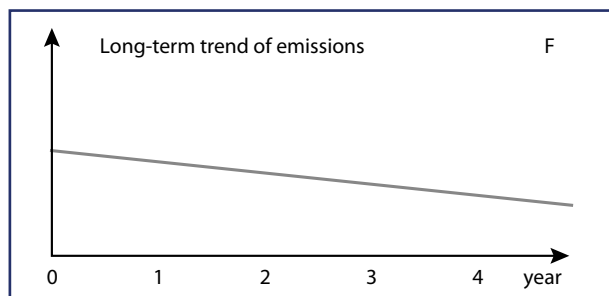
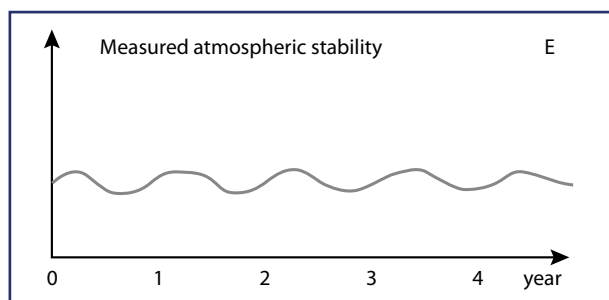
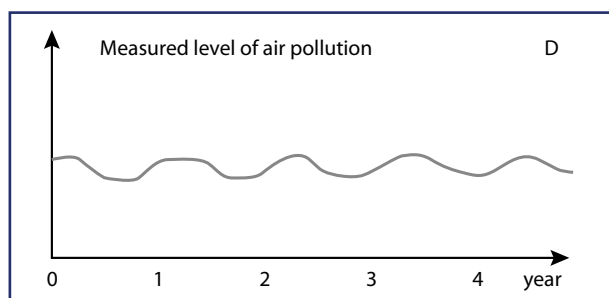


## APPLICATION 2

To understand long time variation of air pollution. If concentration of air pollution and stability is measured during long time, the level of emissions can be estimated.

### DIAGRAM SHOWS

- D** The time series of pollution measurements.
- E** The atmospheric stability data.
- F** D/E the emissions of air pollution during the same time period.



## TECHNICAL SPECIFICATIONS

Dimensions, sampling module <sup>1</sup>	430 × 600 × 260 mm / 25 kg
Dimensions, pumping module <sup>1</sup>	320 × 220 × 300 mm / 10 kg
Collecting module	Refer to the producer's data
Power supply	230 V~ (±10%), 50 / 60 Hz
Max. power	6 A
Power consumption	800 W
Working temperature	+5°C to +35°C (+40°F to +100°F)

### Flow Rate

Operative flow rate	16.67 l/min alt. 38.33 l/min
Flow rate range	8 to 40 l/min.
Flow rate precision	1% of the displayed value
Flow rate accuracy	2% of the displayed value
Flow rate constancy	0.5% of the displayed value
Maximum pressure drop	600 Kpa (16.67 l/min.)
Serial interface	RS 232

<sup>1</sup> Length × Width × Height / Weight

# Atmospheric Stability Monitoring by OPSIS

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Cost-effective method to monitor the atmospheric stability at ground level

Allows determining the time evolution of the air pollution at ground level

An important tool to be used for air pollution forecasts

Complete remote control

Easily integrated in modern stations

Can also be used for automatic dust sampling and measurement

**A18**  
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Please contact your OPSIS supplier to discuss your particular system requirements, including the compounds you wish to monitor. Separate product and other industrial application sheets are available. Specifications subject to change without notice.

## OPSIS AB

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