

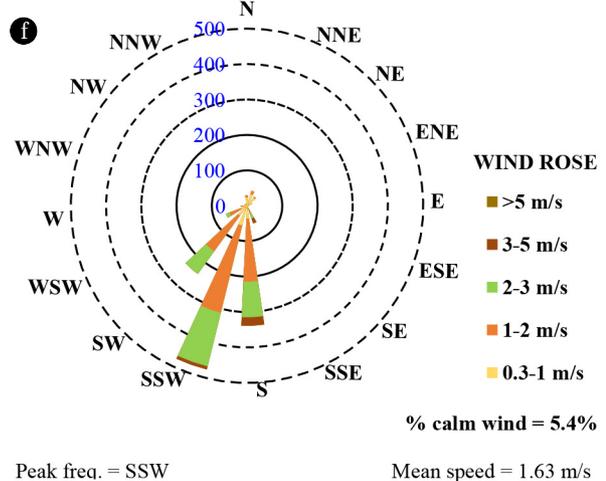
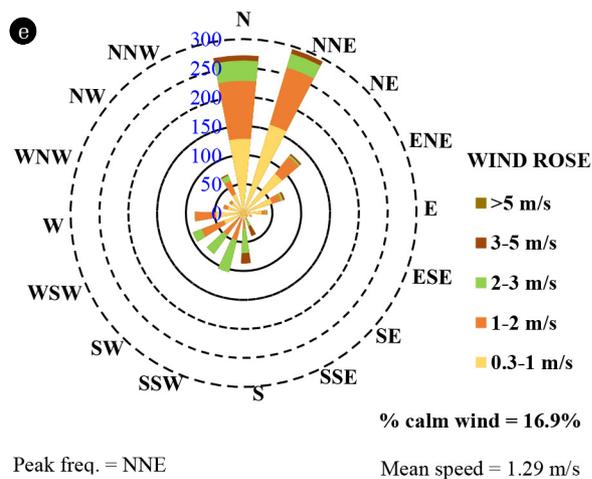
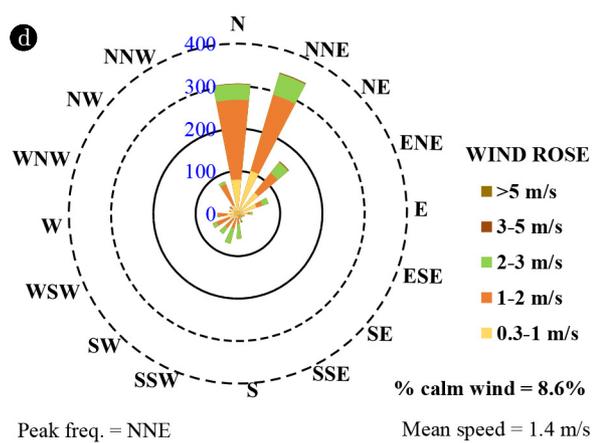
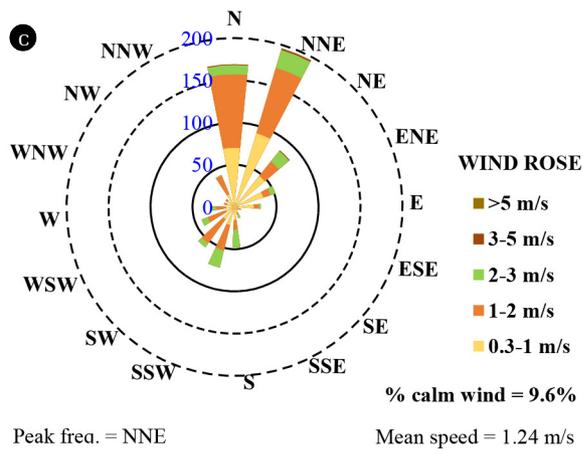
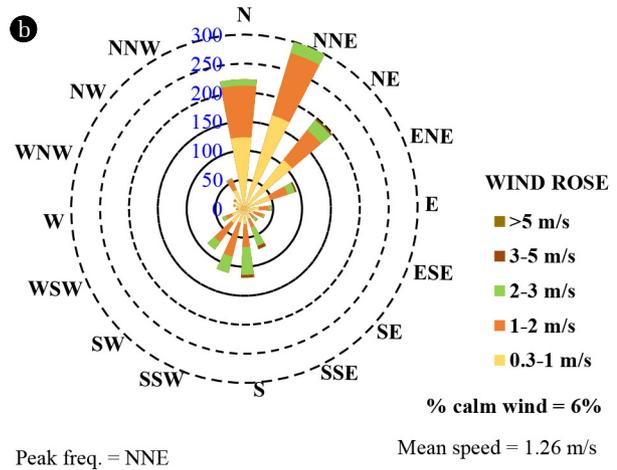
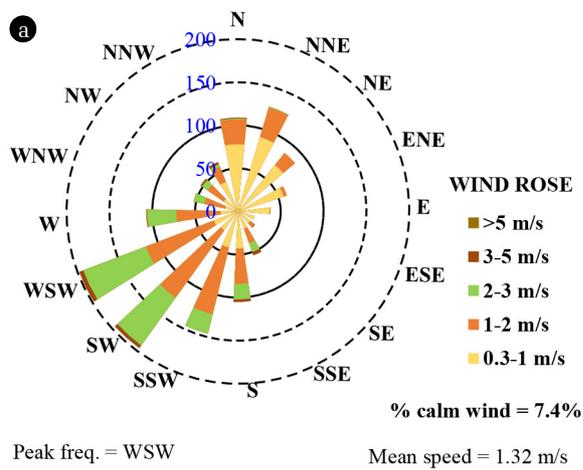


## Supplementary Materials

**Table S1.** Sampling Sites and Characteristics of Elementary Schools in Rayong Province

Site	School characteristics	GPS position Lat-Long
S1	The sampling site is located at Maptaphut industrial estate. Its buildings consist of 2–4 floors and are constructed from concrete materials. It is near an intersection and the high traffic density occurs especially during rush hours. It is located close to a tapioca flour manufactory.	12° 45" 15.96' 101° 8" 11.76'
S2	The school is located at the back of the Maptaphut municipality and surrounded by governmental offices. The buildings are made from wooden materials and consist of 2 floors.	12° 43" 23.37' 101° 7" 35.58'
S3	The school is located near a petrochemical plant. It is built from wooden and concrete materials and consists of 2 floors. It is closed to an intersection and a temple.	12° 41" 6.67' 101° 6" 58.88'
S4	The school is situated on a highway road with a high level of traffic intensity. There are 4-6 floors and classrooms are built from concrete materials. It is surrounded by commercial buildings and a local market.	12° 42" 55.63' 101° 10" 0.45'
S5	The school is close to a highway intersection, which it has been constructing to expand a new road. This site is situated in an urban area. Its buildings consist of 2–3 floors and are constructed from concrete materials.	12° 42" 16.93' 101° 14" 24.69'
S6	The school is located near a temple area. Buildings are included on 2 floors and are built from concrete materials. The sampling site is near the local market and department store. It is approximately 1 km away from a highway intersection.	12° 42" 1.27' 101° 16" 29.44'
S7	The school is situated in a temple area. It is surrounded by a famously local market and commercial buildings with a high level of traffic intensity. Its buildings consist of 3–4 floors and are constructed from concrete materials.	12° 40" 47.88' 101° 16" 59.94'
S8	The school is located in front of Rayong city municipality. There are many government offices such as sanitarium, police station, public park, and high school, which are around this site. A high level of traffic intensity occurs during rush hours. Its buildings are made from concrete materials including 3 floors.	12° 40" 29.73' 101° 16" 44.79'

Fig. S1 showed wind rose pattern (wind speed and direction levels) in Rayong province from September 2018 to February 2019. The southwestern Monsoon is dominant in May to October, which is the rainy season in Thailand. The winter or dry season in Thailand was received the northeast monsoon (November to February). According to this study, the west-southwest wind direction was the dominant in September 2018 (Fig. S1(a)), while the south-southwest wind direction was dominant in February 2019 (Fig. S1(f)). In October 2018 to January 2019, the major wind was from north-northeast direction as shown in Fig. S1(b)–(e). The mean of wind speed ranged 1.24–1.63 m/s with low condition, while the calm condition was 5.4–16.9%.



Source; Pollution Control Department (PCD), Thailand

Fig. S1. Wind rose diagram (wind speed and wind direction) in Rayong province; (a) Sep. 2018, (b) Oct. 2018, (c) Nov. 2018, (d) Dec. 2018, (e) Jan. 2019, and (f) Feb. 2019.

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## The Prevalence Proportions

The prevalence of a disease can be thought of as a metric of disease status; it is the proportion of people in a population having a disease. The prevalence of an illness is typically relevant since it represents the disease's burden. Knowledge of disease's burden can assist decision in determining where healthcare should be focused. The percentage of prevalence can be calculated as shown in Eq. (S1).

$$\% \text{ Prevalence} = \frac{\text{Number of students having the disease at time point}}{\text{Total number of students in the population}} \times 100 \quad (\text{S1})$$

Where the number of students having the disease was the student symptoms, which was the sometimes and the often symptoms. Total number of students in the population was a total number of 638 students (questionnaire) from grades 1 to 6 in the elementary schools in Rayong city.

**Example:** calculating the prevalence proportions of eye irritation using Eq. (S2).

$$\% \text{ Prevalence} = \frac{25+21+163+170}{638} \times 100 = \frac{379}{638} \times 100 \quad (\text{S2})$$

$$\% \text{ Prevalence} = 59.4$$

## Reference

1. Centers for Disease Control and Prevention (CDC). Principles of epidemiology in public health practice. 3<sup>rd</sup> ed. Atlanta, USA: Centers for Disease Control and Prevention (CDC); 2012. p. 16-17. [Cited 1 October 2021]. Available from: <https://www.cdc.gov/csels/dsepd/ss1978/SS1978.pdf>.