A study on evacuate or shelter-in-place for accidental toxic gas release

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If a community is being exposed to harm as a result of a major incident, appropriate mitigating measures must be implemented without delay. When toxic gas is released during for a certain time, toxic gas clouds may be dispersed with wind direction. In this event, people leaving downwind area should be evacuated or stayed in a building with sealing doors and windows and wait until the toxic plume has gone. The building acts as a barrier that slows down the toxic gas entrance and the inside concentration of toxic gas would be lower than outside, as well as the toxic load to which people are exposed. The criterion for evacuate or not of residence in the building is not setup, which might depends on the building and metrological conditions.
In this work, we analysis the toxic gas concentration in the building with toxic gas atmospheric dispersion to help that the local communities are likely to be advised to go indoors and to close windows and doors until given further advice by the emergency manager.