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Due to the intensification of world trade and international travels, the number of biological invasions of terrestrial invertebrates is increasing exponentially in many parts of the world. New invaders can eventually benefit from climate warming to establish in previously non favourable areas. Modelling the potential range expansion of invasive species has thus become an important step in pest risk analyses.

The pine wood nematode, *Bursaphelenchus xylophylus*, is a worldwide threat to forests and international trade. Native to North America, it has been introduced to several Asian countries (Japan, China, Taiwan, Korea) and Europe (Portugal and some records in Spain). This nematode causes the pine wilt and death within a few weeks under particular conditions. In spite of control measures, the nematode continues to spread at short distance with carrier beetles of the genus *Monochamus* and at long distance when infested materials are accidentally moved in association with human activities.

A spread model, combining short distance dispersal and long-distance jumps, has been developed, calibrated and validated with the invasion in China. It was then applied to Europe to identify the ports from where the nematode could spread the most rapidly if it was introduced. The model will be refined and calibrated to Europe in the EU project REPHRAME (2011-2014). This modelling approach is applicable to other pests, especially to explore the invasion risk in Russia of pests coming from Asia or Europe.