Firefighter Model 2015

By the MISS ABMS trainer team

A landscape displays a random pattern with half forested plots and half cleared plots. The area represents 900 Ha of a fire-prone monospecific open forest that is divided in plots of 1 Ha. When a fire breaks out, it spreads swiftly around the landscape by setting ablaze all neighboring forested plots.

A voluntary forest fire-fighting brigade made of 10 firefighters is monitoring the forest. Each firefighter patrols the forest by moving randomly from one plot to a surrounding plot. When detecting a burning plot around its location, a firefighter goes to the fire site to extinguish it.

In a first scenario, firefighters act independently: they have no mean to know where the other fighters are located and what they are currently doing.

In a second scenario, the location and the status (fighting a fire or patrolling) of each firefighter are known to all. When a firefighter does not detect any fire around his/her own location, he/she moves towards the closest fire fought by one the other firefighters if any, else he/she continues patrolling

Compare the two scenarios when initially a fire breaks out in a forested plot randomly picked.

http://cormas.cirad.fr/en/formati/MISS-ABMS-2015.htm