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Faculty of Business and Built Environment
Research Centre of Metal Structures, Seinäjoki, Hämeenlinna, Finland

Virtuaalinen EU-Ita
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Conclusions

- The Eurocode reduction of the fire load with sprinklers (SFS-EN 1991-1-2 Annex E) gives the same maximum temperatures as the simulation with sprinklers up to the first peak of the heat release rate
- If it is used to simulate temperatures after the first peak of RHR, the temperatures are very conservative based on the results for fires of three and four cars
- The Eurocode reduction does not take into account the fact that adjacent cars do not ignite, as is the case with the car fire models and as observed on the other real fire scenarios
- ⇒ The Eurocode method seems to work well if there are only one burning object in the fire area
- Further research are still needed

8.6.2013, Naples, Mikko Partanen

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Problems/questions encountered during process

- Ignition from one car to another is difficult to get work
 - ⇒ Is the model too simple to model car fires?
 - ⇒ Should the model be improved in some way?
- How do different sprinklers affect the results?
 - Flow rate?
 - Spray angle?
 - Pressure?

Thank you!

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References:

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[3] Schleich, J.-B., Cajot, L.-G. etc., Competitive steel buildings through natural fire safety concepts, Final Report 2002, European Commission technical steel research - Steel structures

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