

# Heat loss comparison for single pipe, twin pipe and triple pipe configurations

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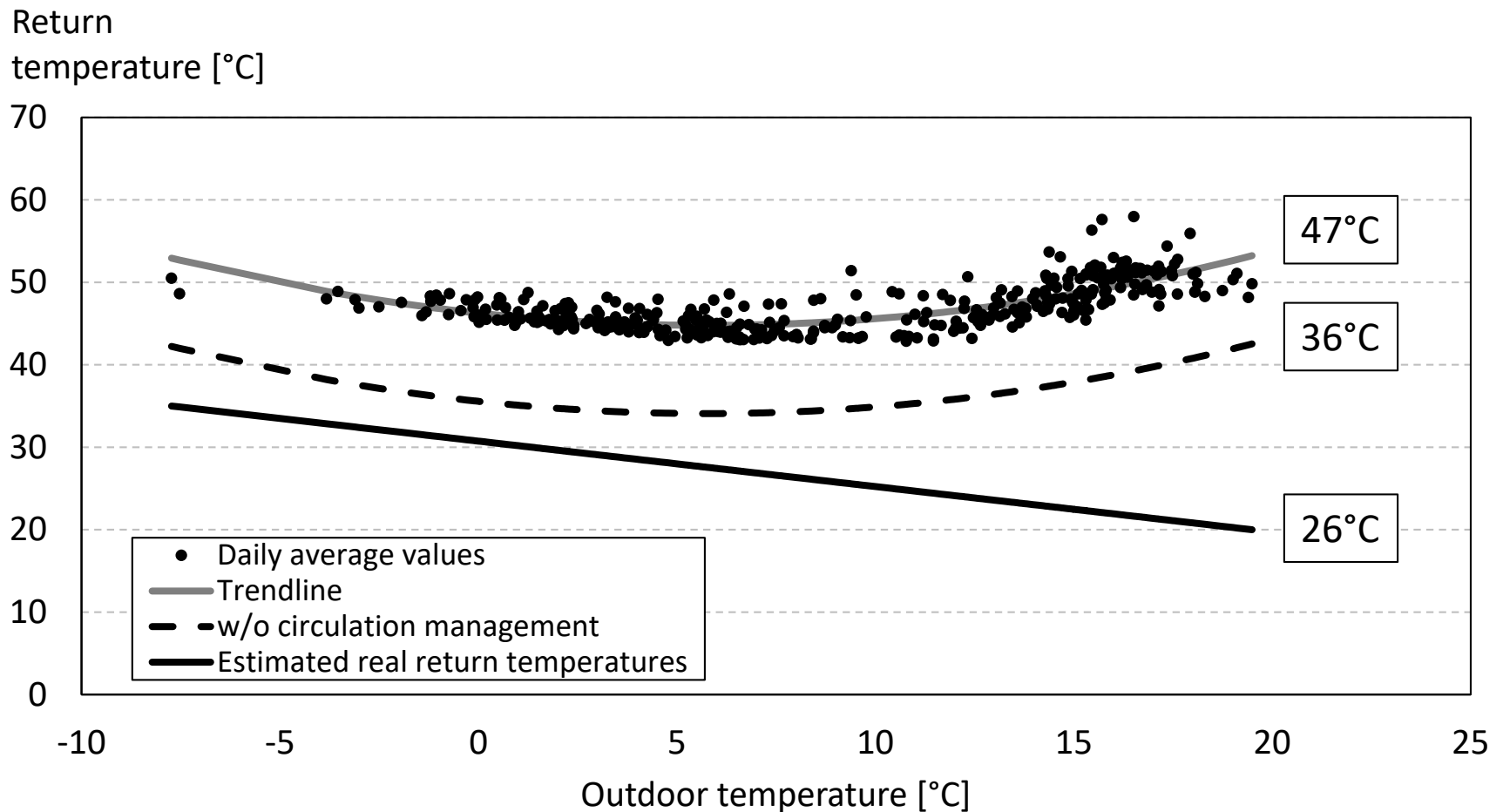
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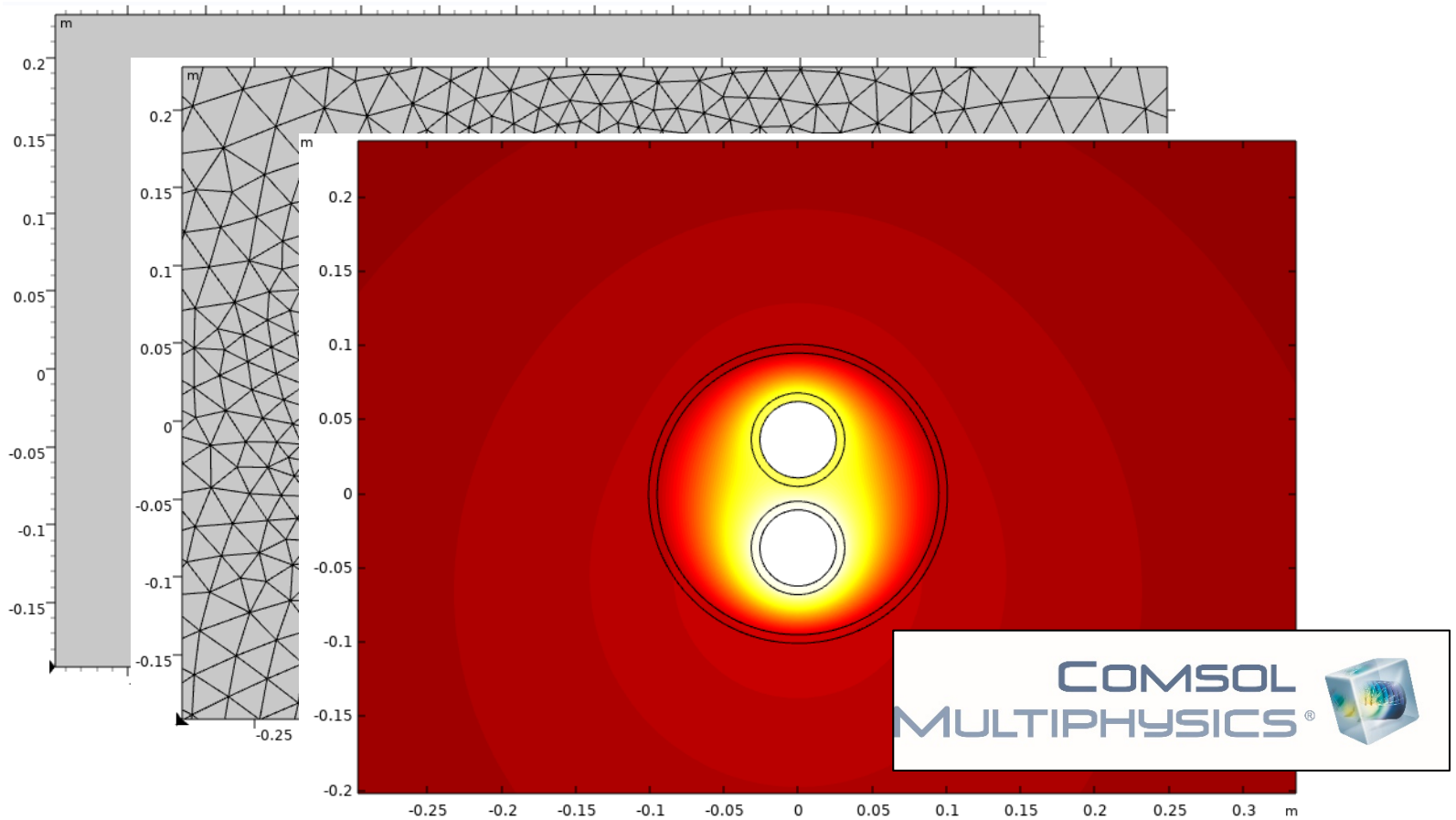
# Outline

- Background
- Method
- Results
- Conclusions

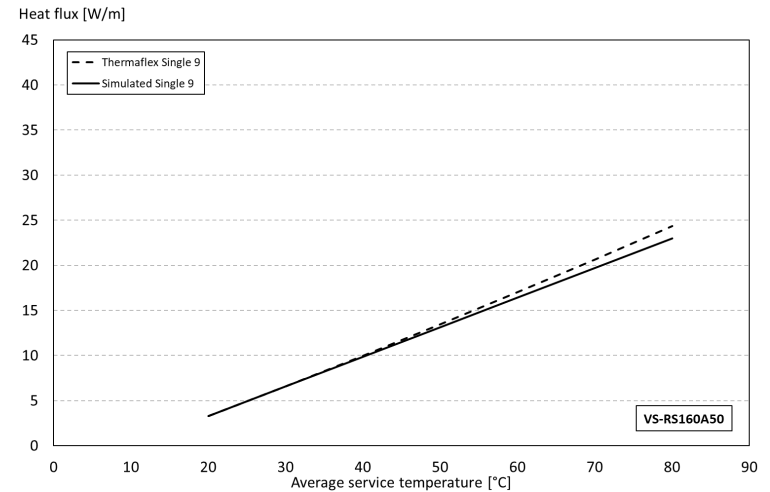
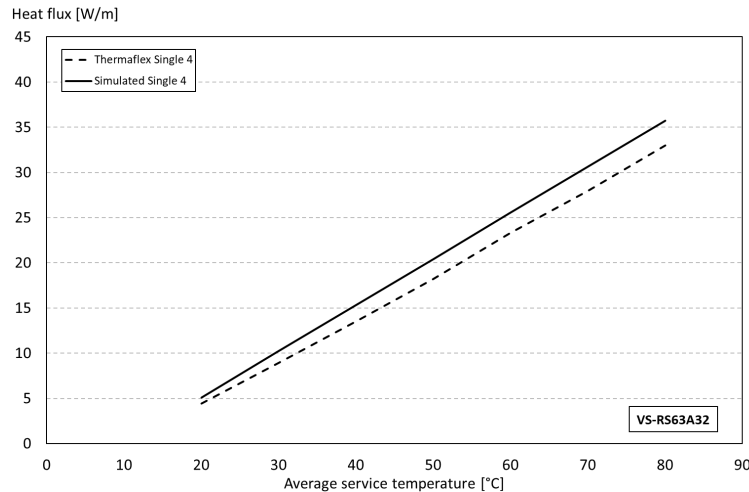
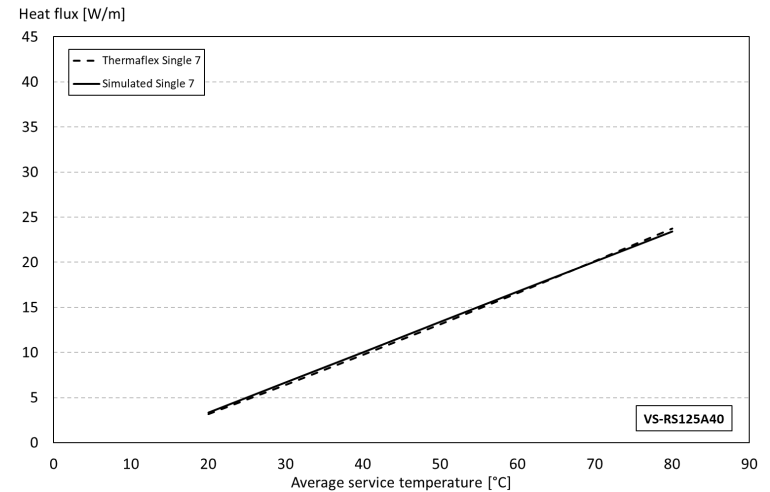
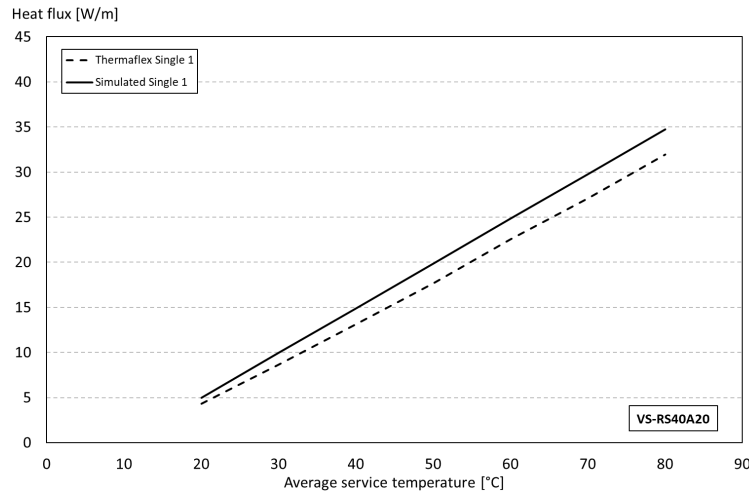
# Background



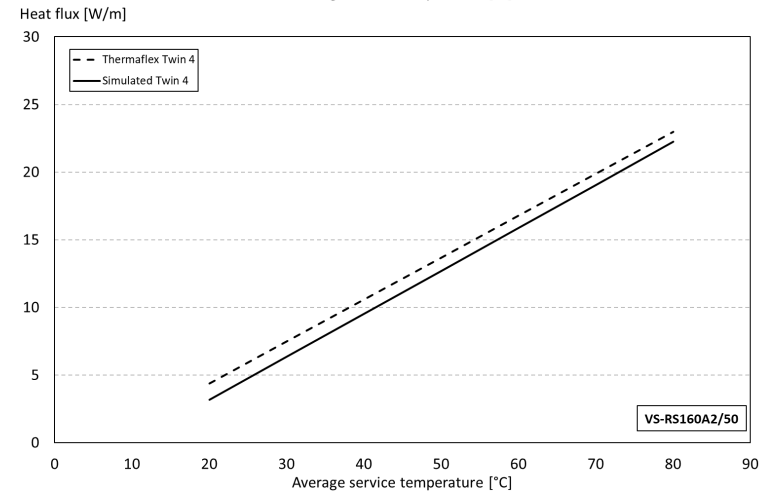
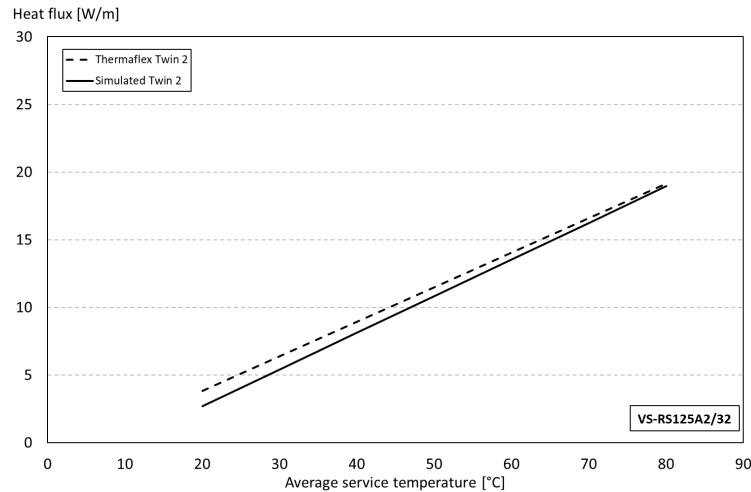
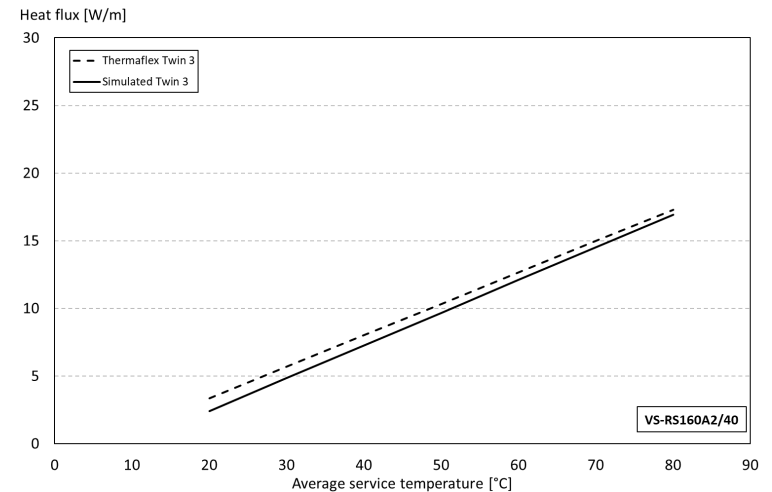
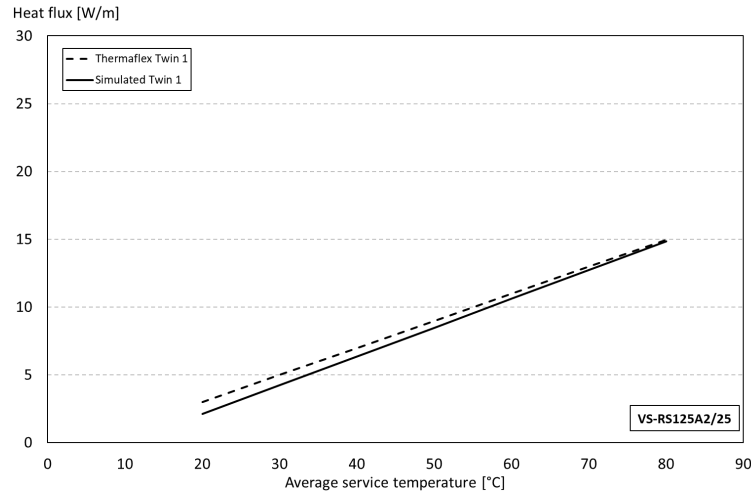
# Method



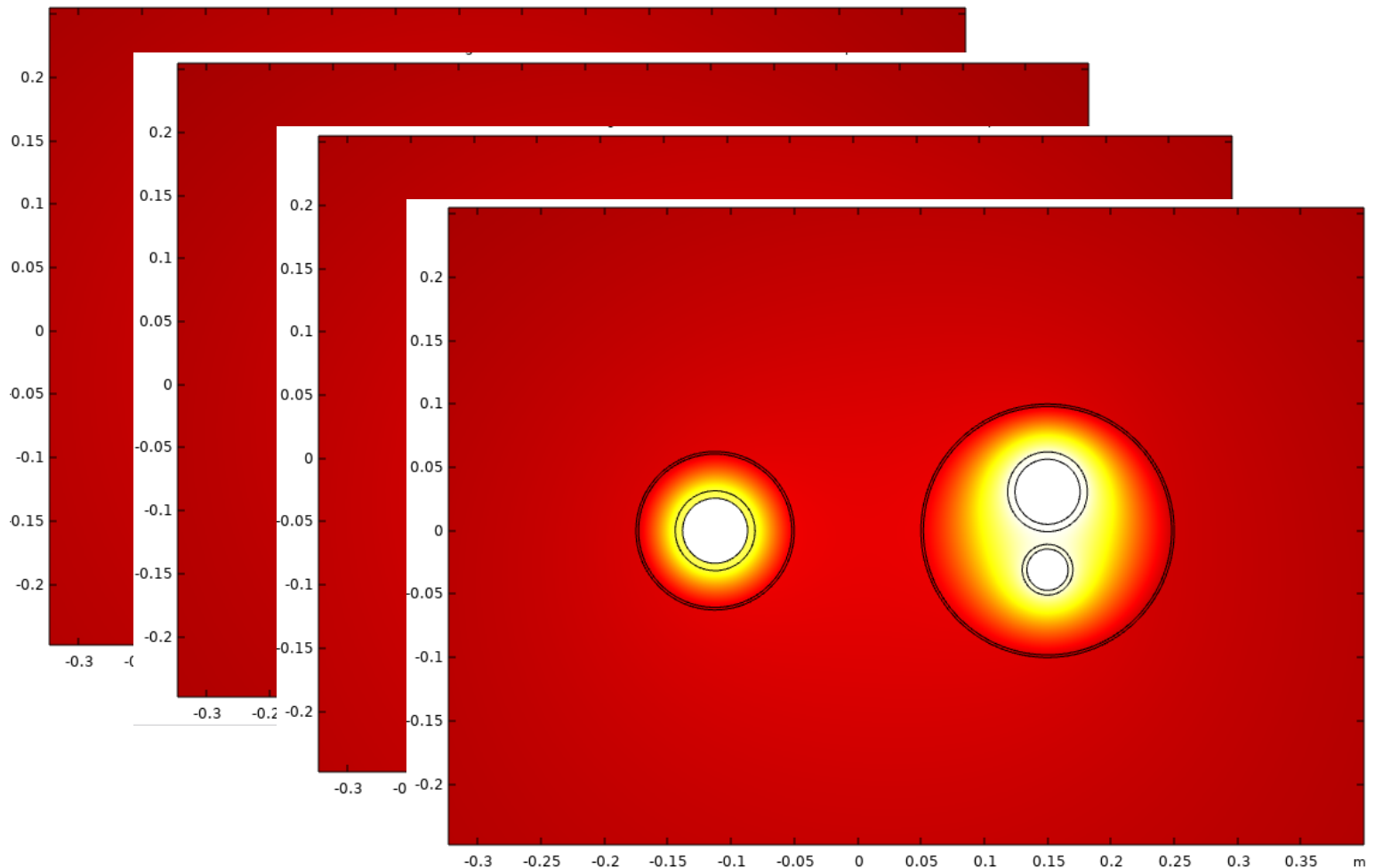
# Results – Credibility control – Single pipes



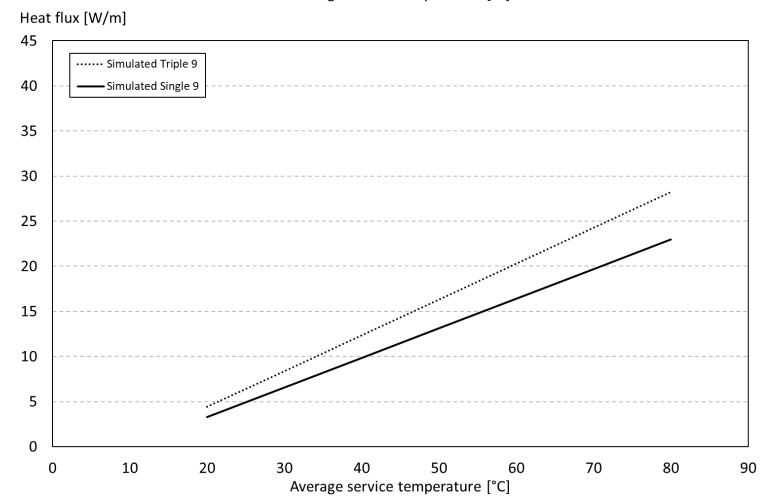
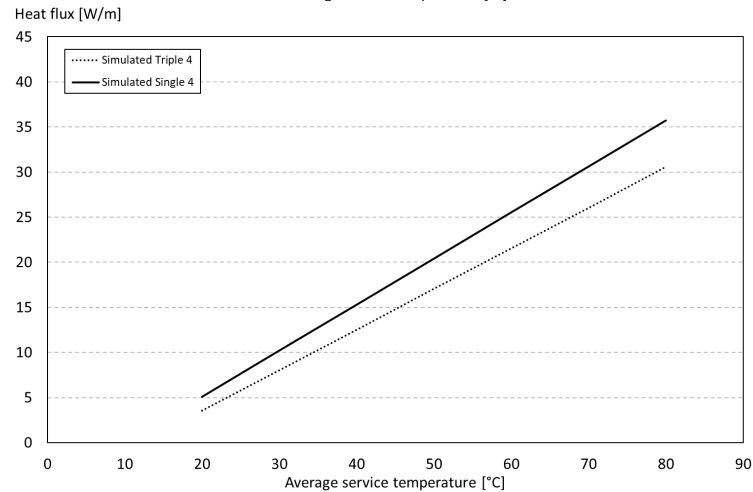
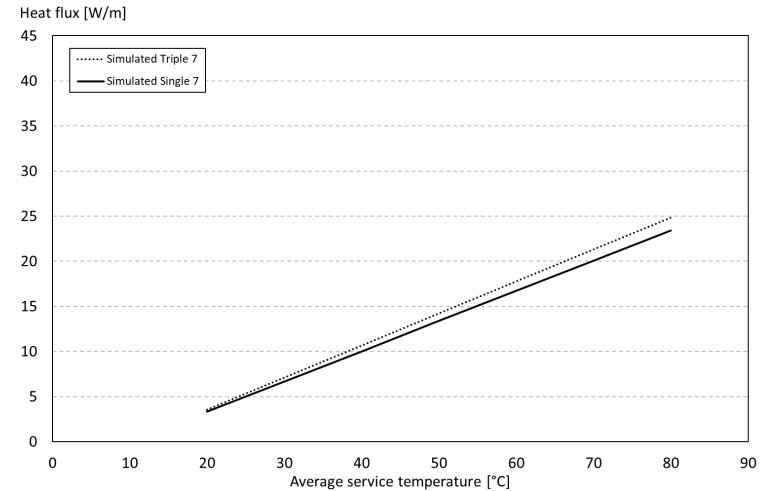
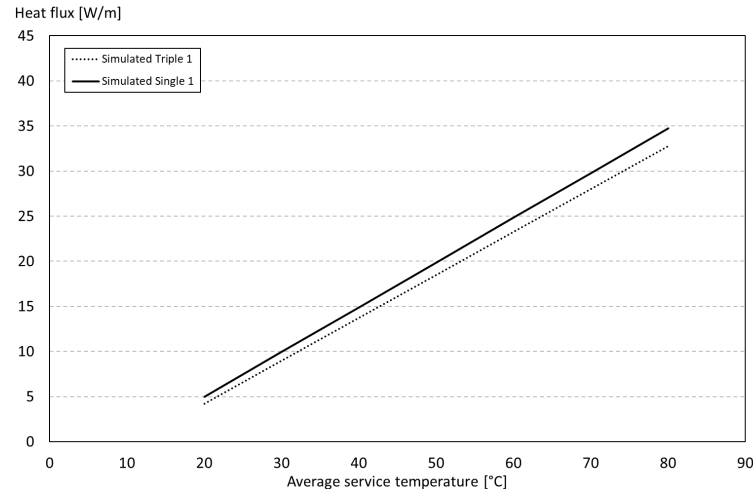
# Results – Credibility control – Twin pipes



# Considered geometry (1) – Triple pipe

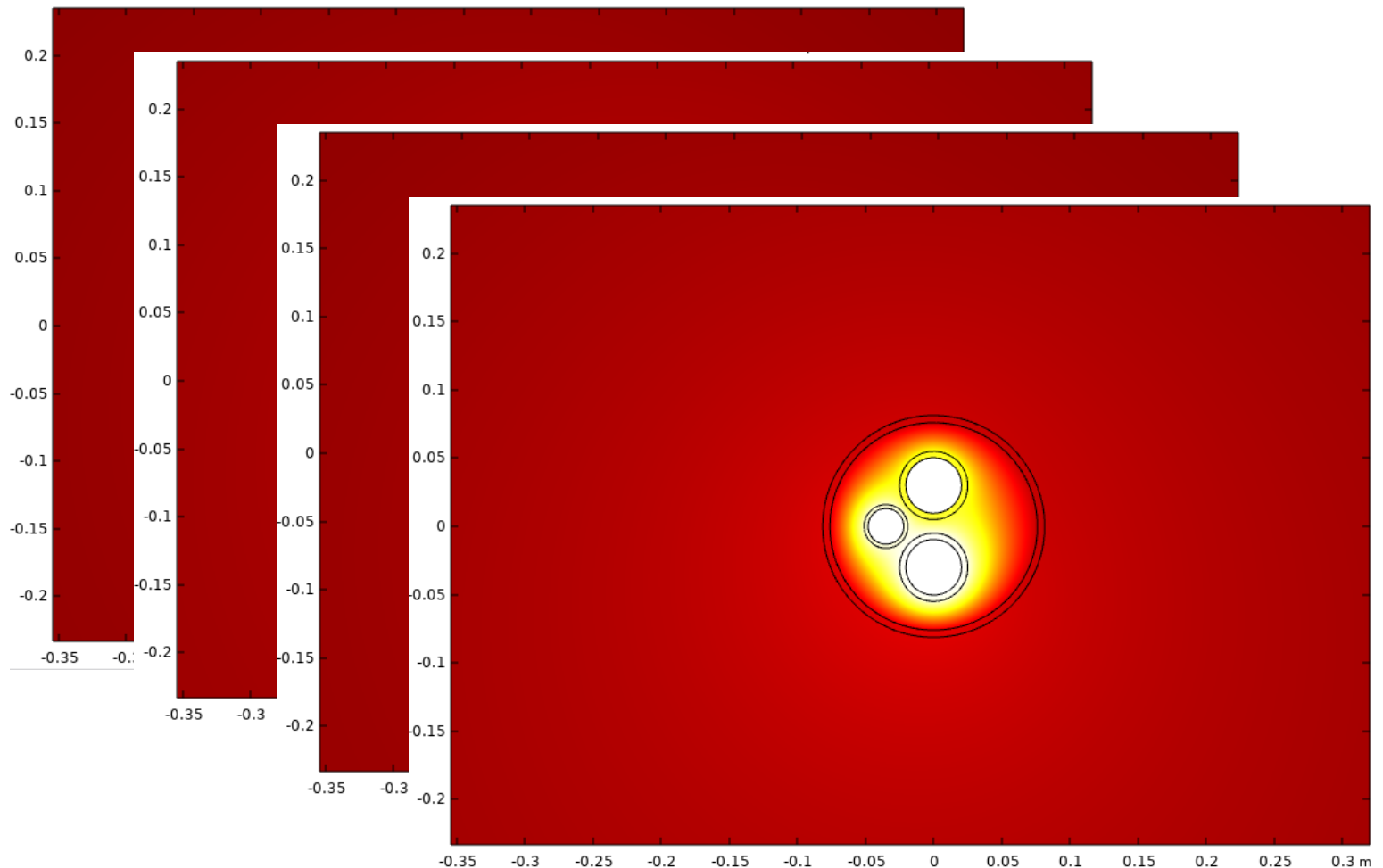


# Results – Heat loss – Triple/Single pipes

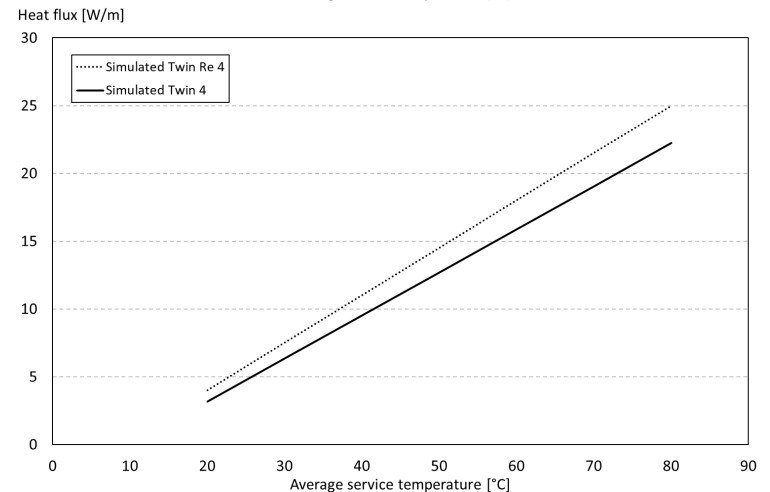
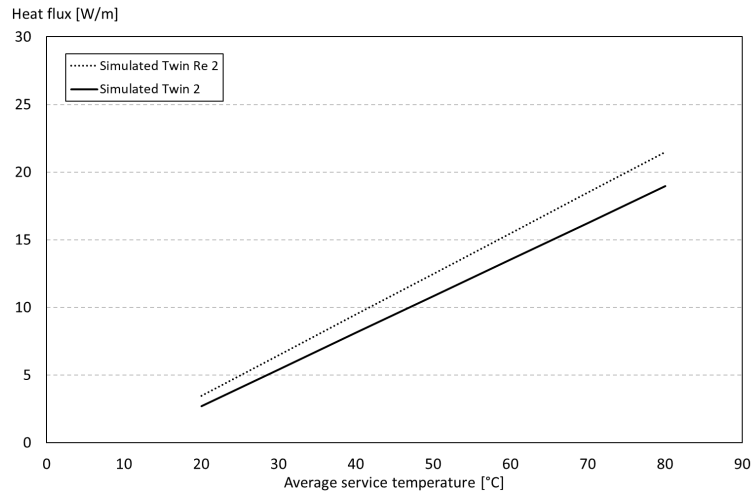
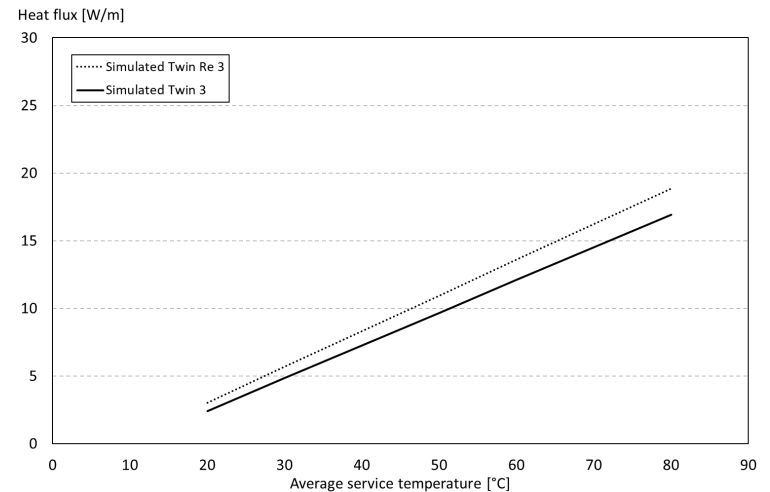
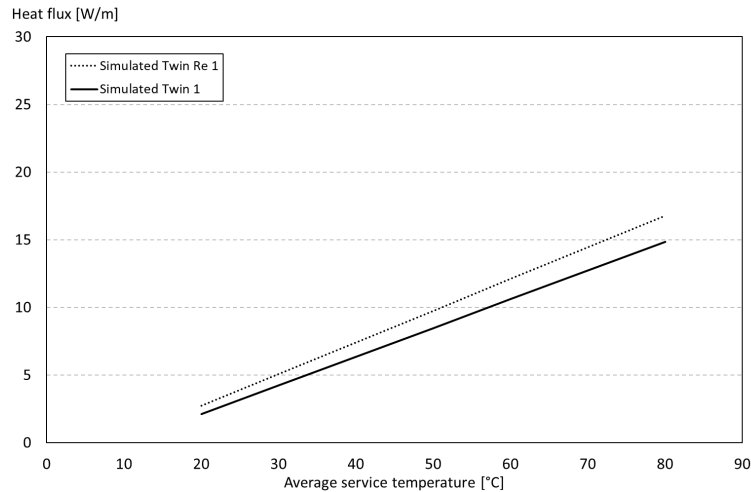




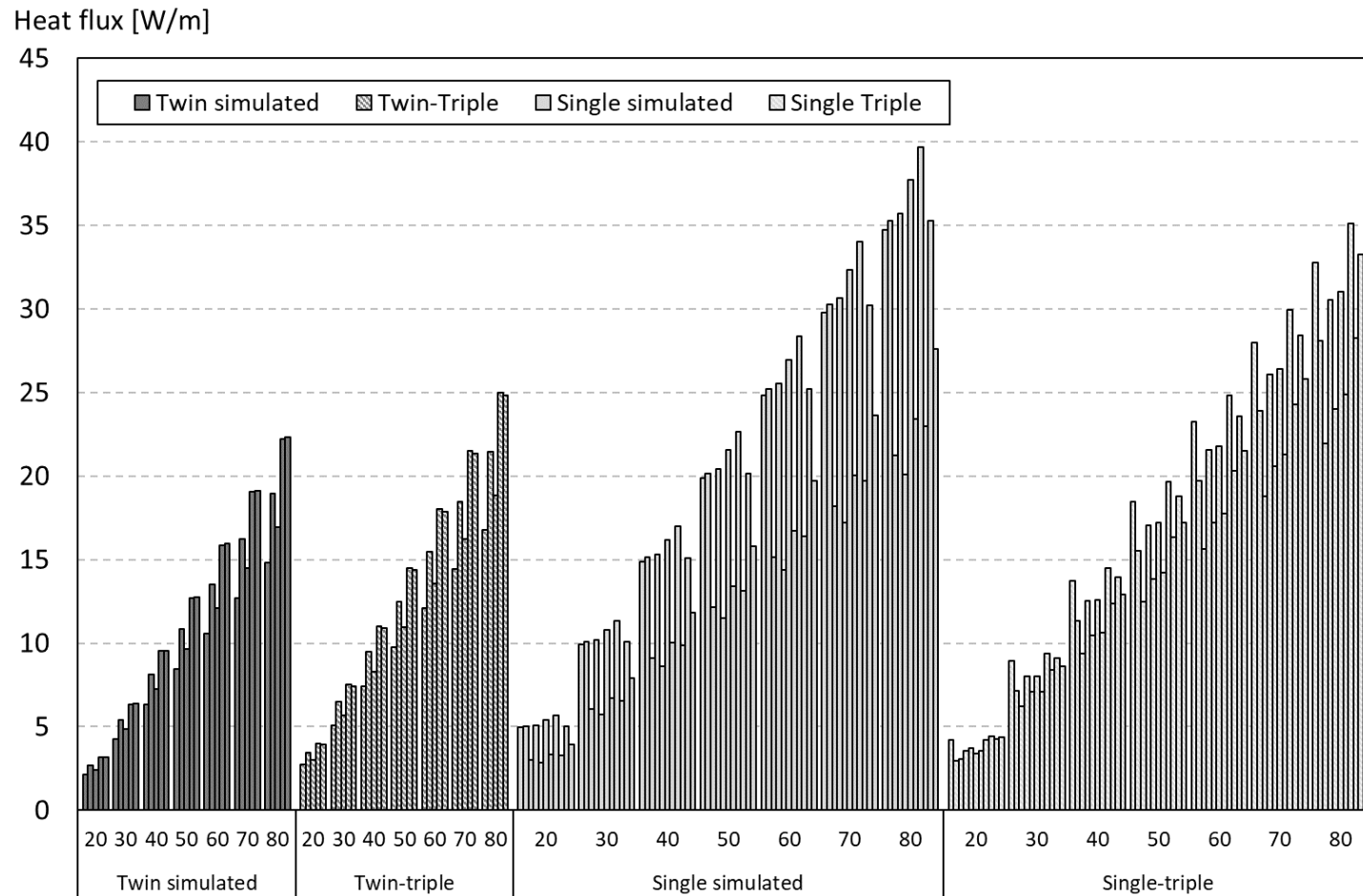
# Considered geometry (2) – Triple pipe



# Results – Heat loss – Triple/Twin pipes



# Results – Summary



# Conclusions

- Use of a third pipe for recirculation purposes can be a solution to counteract temperature contamination in future district heating systems
- Introduction of a third pipe for recirculation purposes, does not appear to, result in any significant change of heat loss

# Thank you for your attention

Helge Averfalk

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