The use of magnitude estimation to assess the odour and irritation of sidestream smoke – (Part 2) with the cubicle method

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Outline

1. Objective of Study
2. Cubicle leakage test (CO decay rates)
3. Sidestream smoke
    - Dose-response
4. Conclusions and Recommendations

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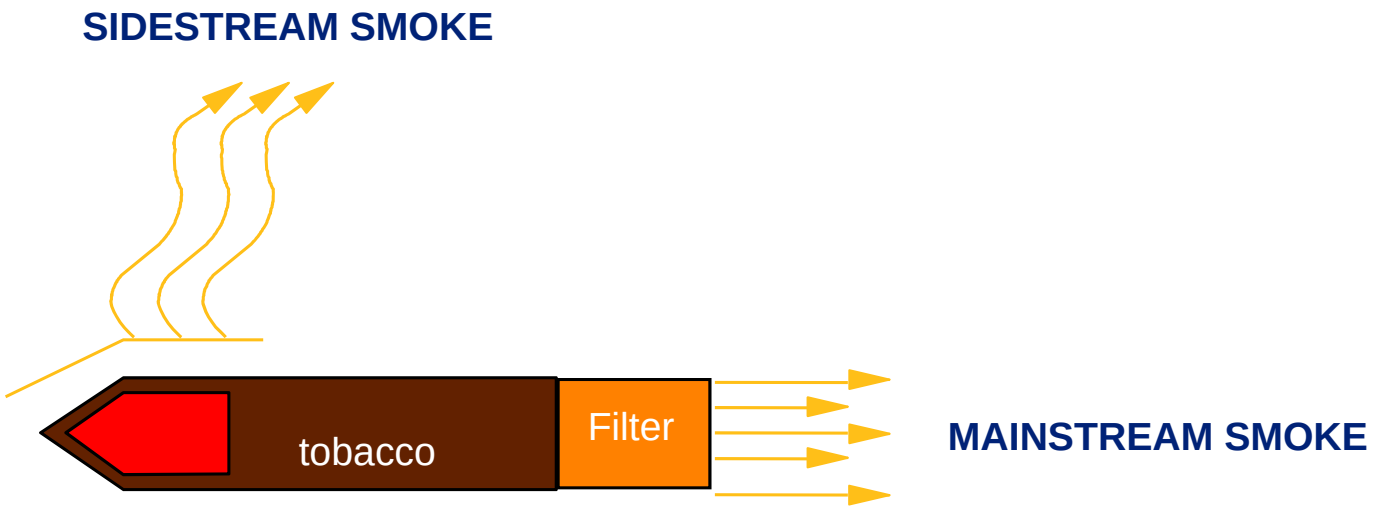
Why we are doing this research?

- Please refer to the preceding presentation on the Fabric Method for full details

- sidestream smoke odour



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Objective of this study

- **‘cubicle-based’ methodology**

- Same approach as the fabric method:
  - **optimum amount of smoke**
  - **dose-response** relationship
  - **magnitude estimation** method (**ISO 11056**)

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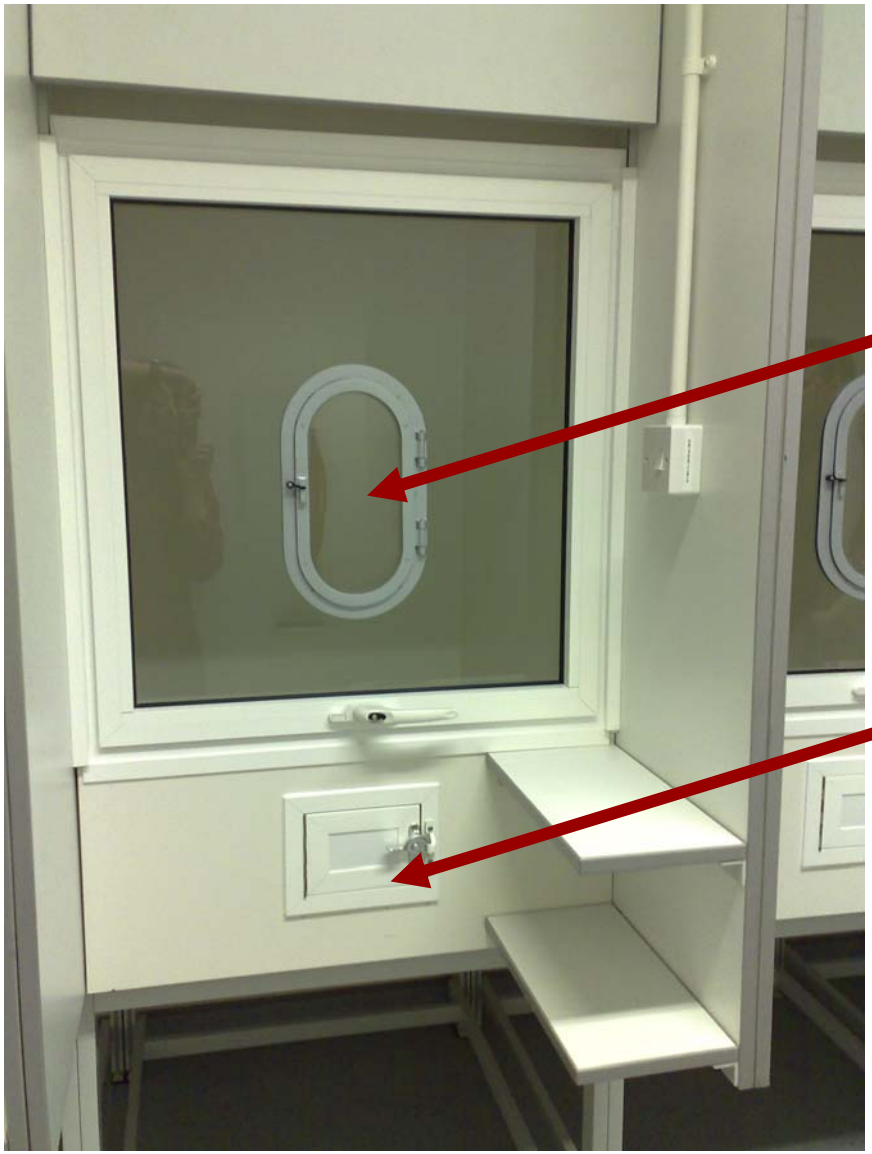
2. Sidestream smoke: Experimental

Volume of cubicle or booth:

~ 1 m^3



Panellist smoke assessment point

Cigarette sample admission entrance

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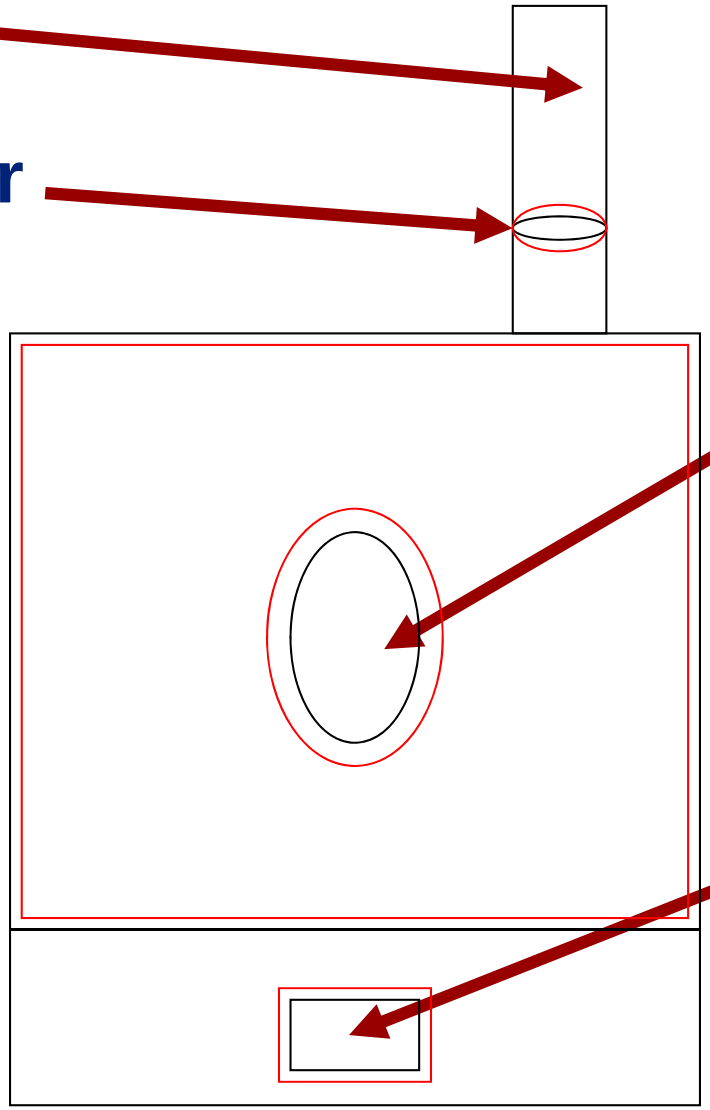
2. Sidestream smoke: Experimental

Exhaust pipe

damper



Panellist smoke assessment point

Cigarette sample admission entrance

Volume of cubicle or booth:

~ 1 m^3

4 possible leakage points

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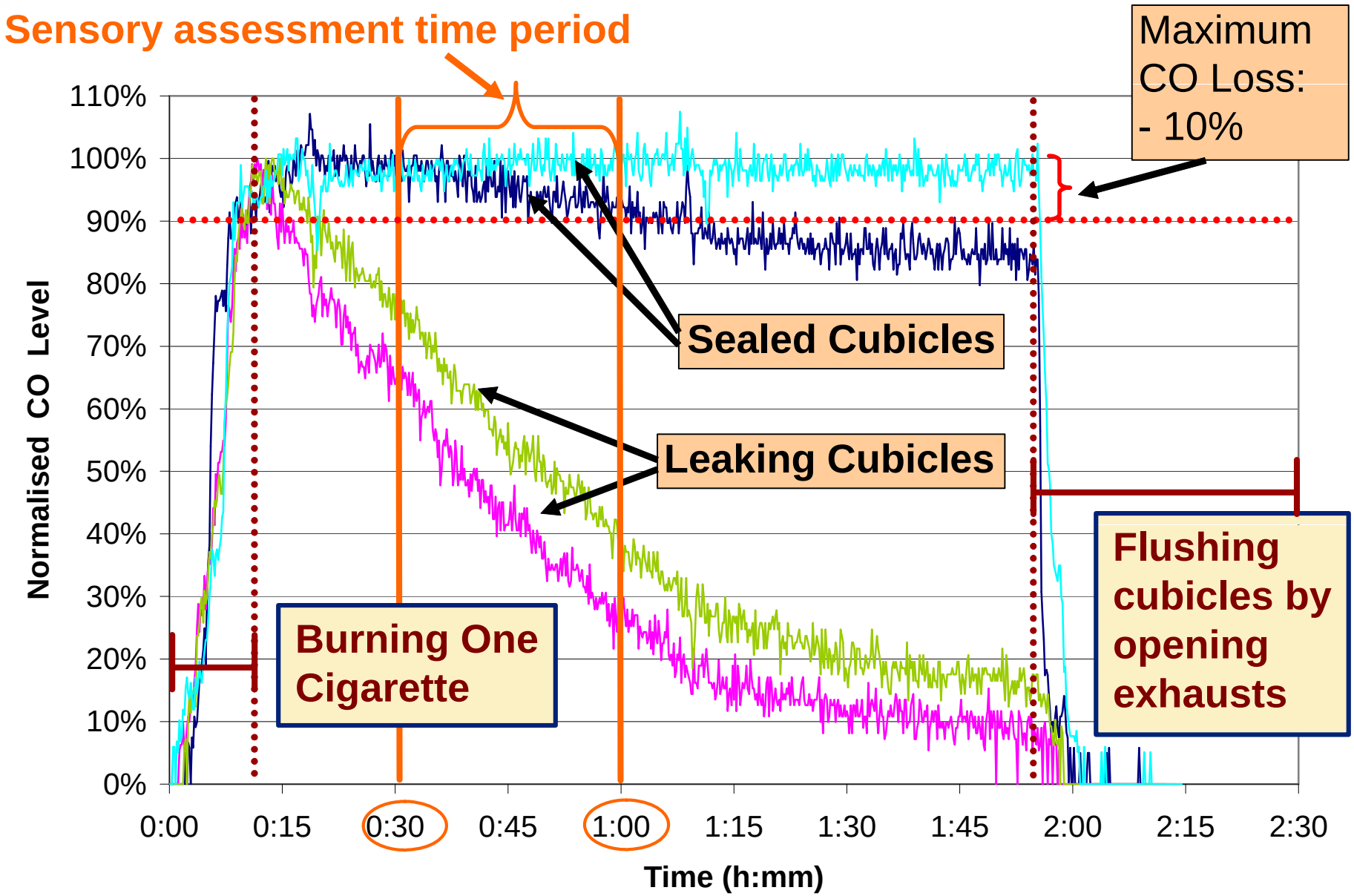
2. Cubicle Leakage Test

CO Measurement



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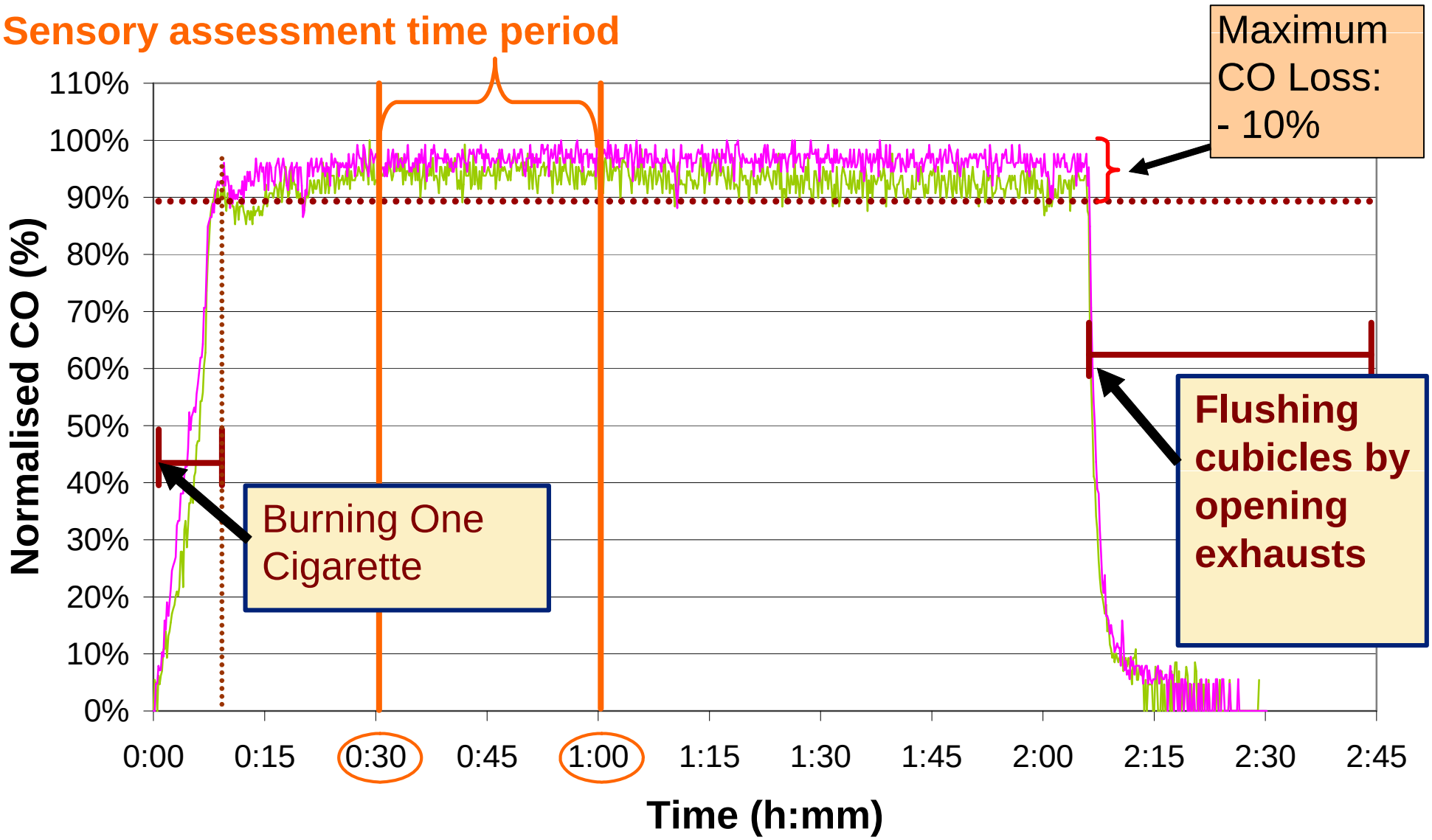
2. Cubicle Leakage Test

CO Levels for Cubicles 2 & 3 with exhaust taped-up with a plastic cover



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3. Methodology for Dose-Response Relationship - Preparation

- Reference cigarettes (**3R4F**):
  - conditioned
  - marked up for amount of tobacco burnt required

Sample	1	2	3	4	5
Amount of Tobacco Burnt (mg)	50	100	200	400	800

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3. Methodology for Sample Preparation

Experimental

- **30 minutes** after removal of the cigarette from the cubicle:
  - 5 panellists per session
  - 4 cubicles
  - 1 Reference + 3 different weights of tobacco burnt

- Order of presentation randomised
  - Latin Square design

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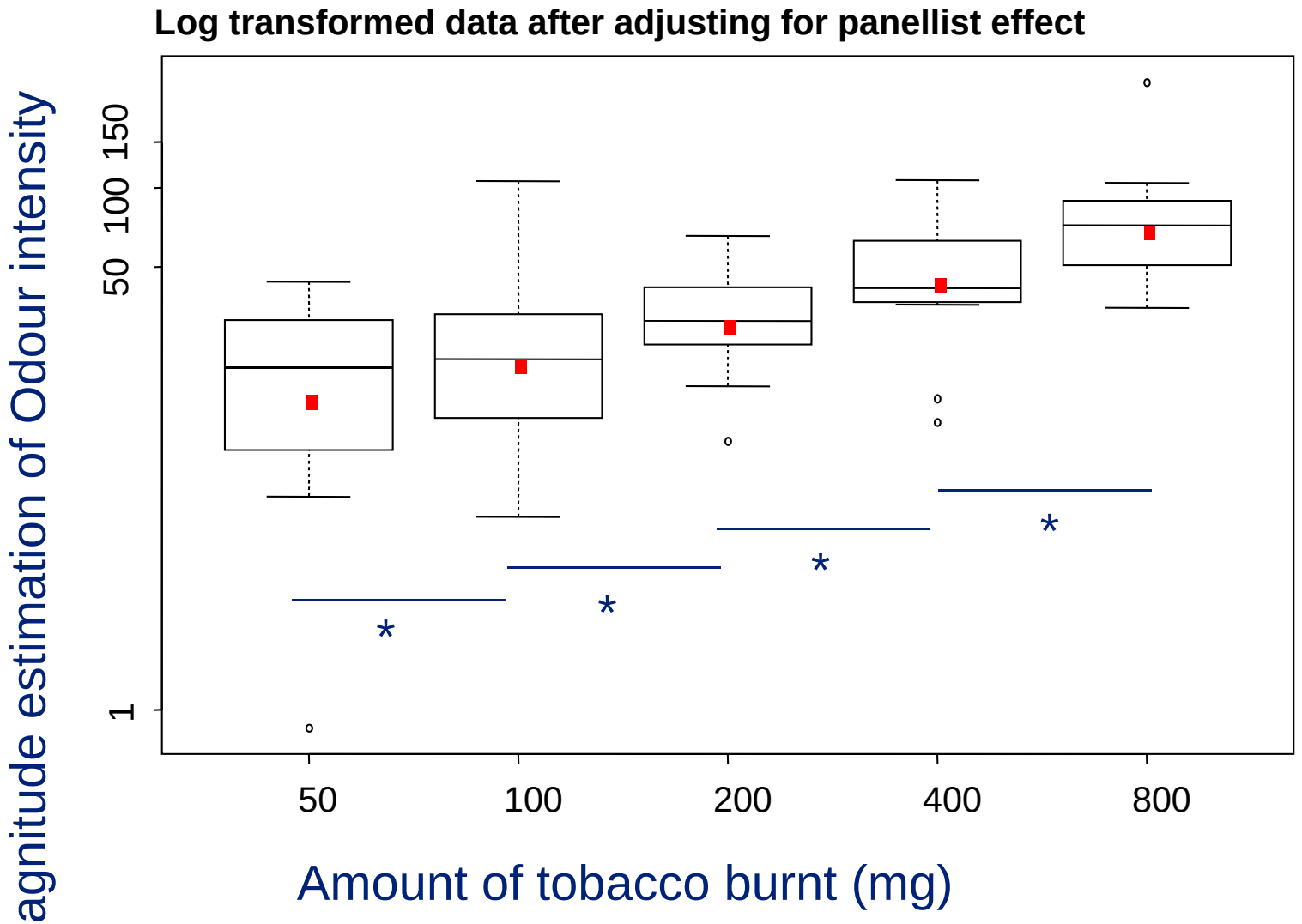
3. Sidestream smoke – Dose response

INTERIM Results – Odour Intensity

ANOVA



- **mean**

* Significant difference at 95% level

14 data points for 50, 100 mg

17 data points for 200, 400 mg

31 data points for 800 mg

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4. Sidestream smoke in cubicles: Dose-Response - CONCLUSIONS

- Linear relationship obtained using log-log scales:
  - between 50 and 800 mg

- The optimum **dose** (amount of tobacco burnt) for product comparison **could not be determined** with the limited data

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Sidestream smoke: Cubicle Method

Recommendations

- Improve cubicle seals (dampers in exhaust pipe)
- Produce **dose-response** using:
  - a minimum of **30** data points
  - additional point at **1,600 mg** tobacco burnt
- Determine optimum amount of tobacco burnt for product comparison
- Validate method using protoypes and commercial products

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THANK YOU
FOR YOUR ATTENTION

ANY QUESTIONS

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