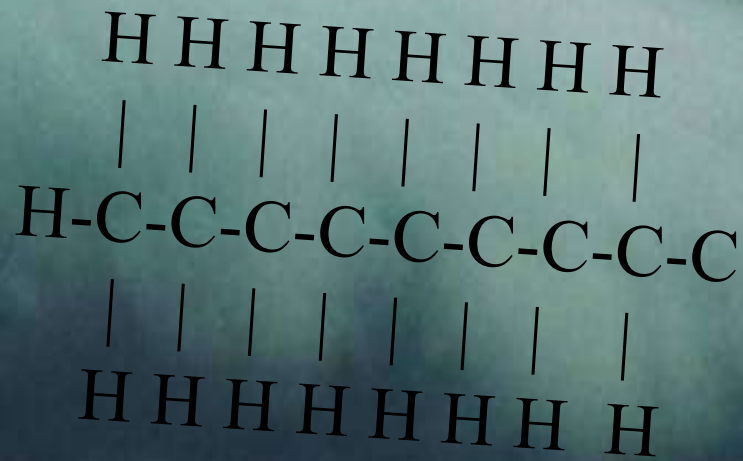


Monitoring, Reporting and Verification of GHG emissions

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CO_2



Accuracy vs. methodology

- Paper MEPC 65/INF.3 by IMarEST:
- Four ways of measuring:
 - 1. Bunker Delivery Note
 - 2. Tank gauging
 - 3. Flow meters
 - 4. Stack monitoring
- 1.-3. Measure fuel consumption
- 4. Measures emissions

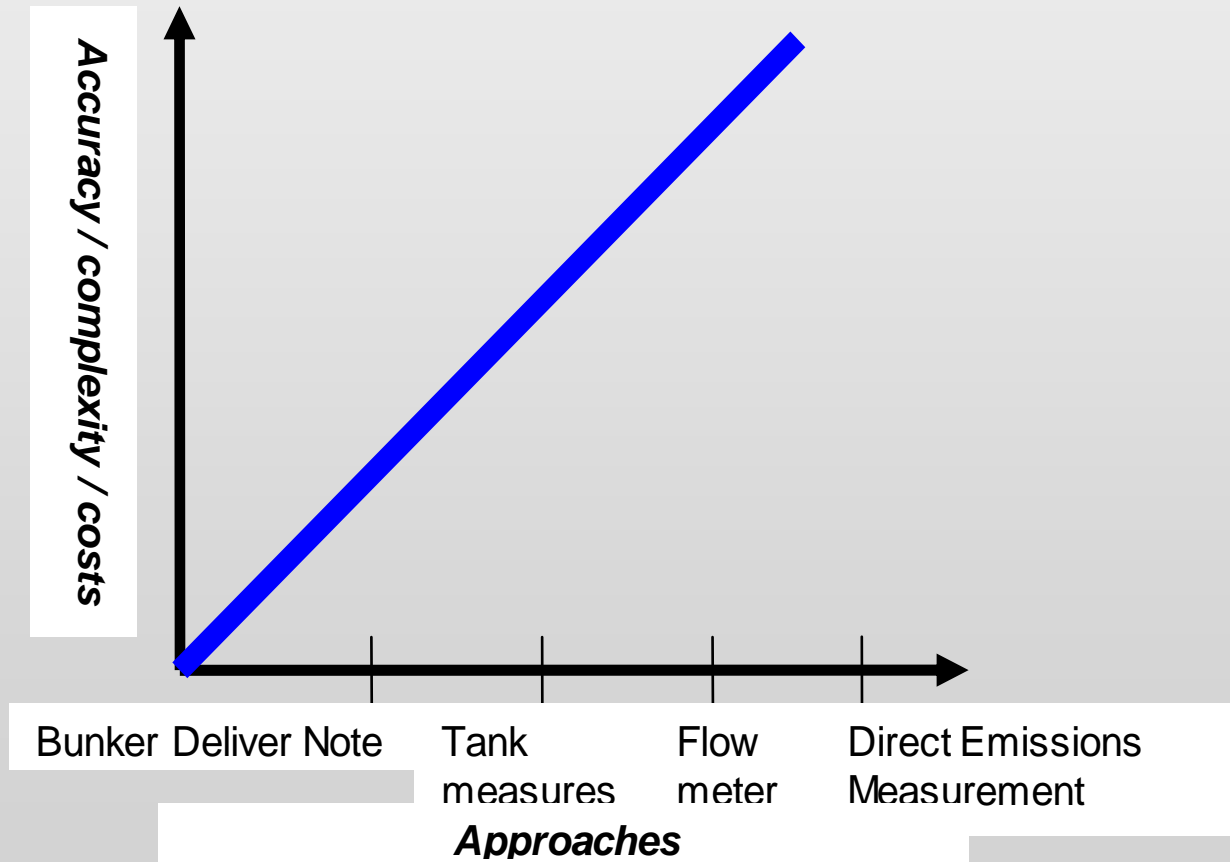
Accuracy vs. methodology

- Bunker Delivery Note:
 - Valid for ships trading solely within EU Waters
 - Will most likely “over-report”
- Tank gauging:
 - Simple method
 - Manually or by remote sensing
 - Accuracy can vary acc. to ship construction and software used for tank tables
 - Can be integrated into the loading computer

Accuracy vs. methodology

- Flow meters:
 - Can be very accurate (+/- 0.5%)
 - Easy to measure "into zone" and "out of zone"
- Stack monitoring:
 - Highly sophisticated methodology
 - Limited experience by shipowners
 - Very accurate
 - Can also measure other fumes, e.g. SO_x, NO_x

Accuracy vs. methodology



THANK YOU

