

# CiDRA<sup>®</sup>



## **NEW TECHNOLOGY FOR DREDGING MIXTURE VELOCITY MEASUREMENT**

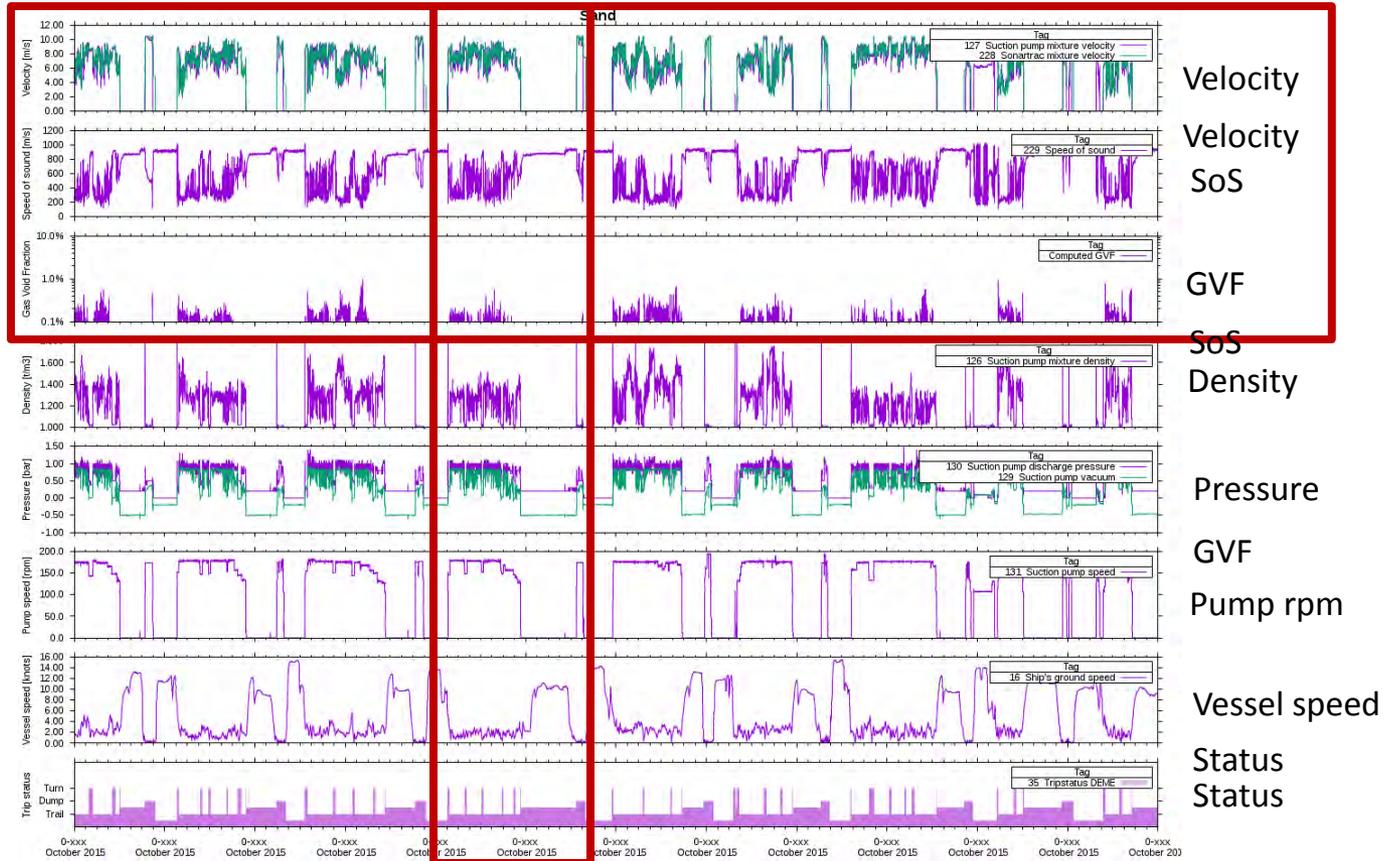
A.M. van der Spek PhD, R. Dopieralla, J. Viega and N. Heude

## Evaluation

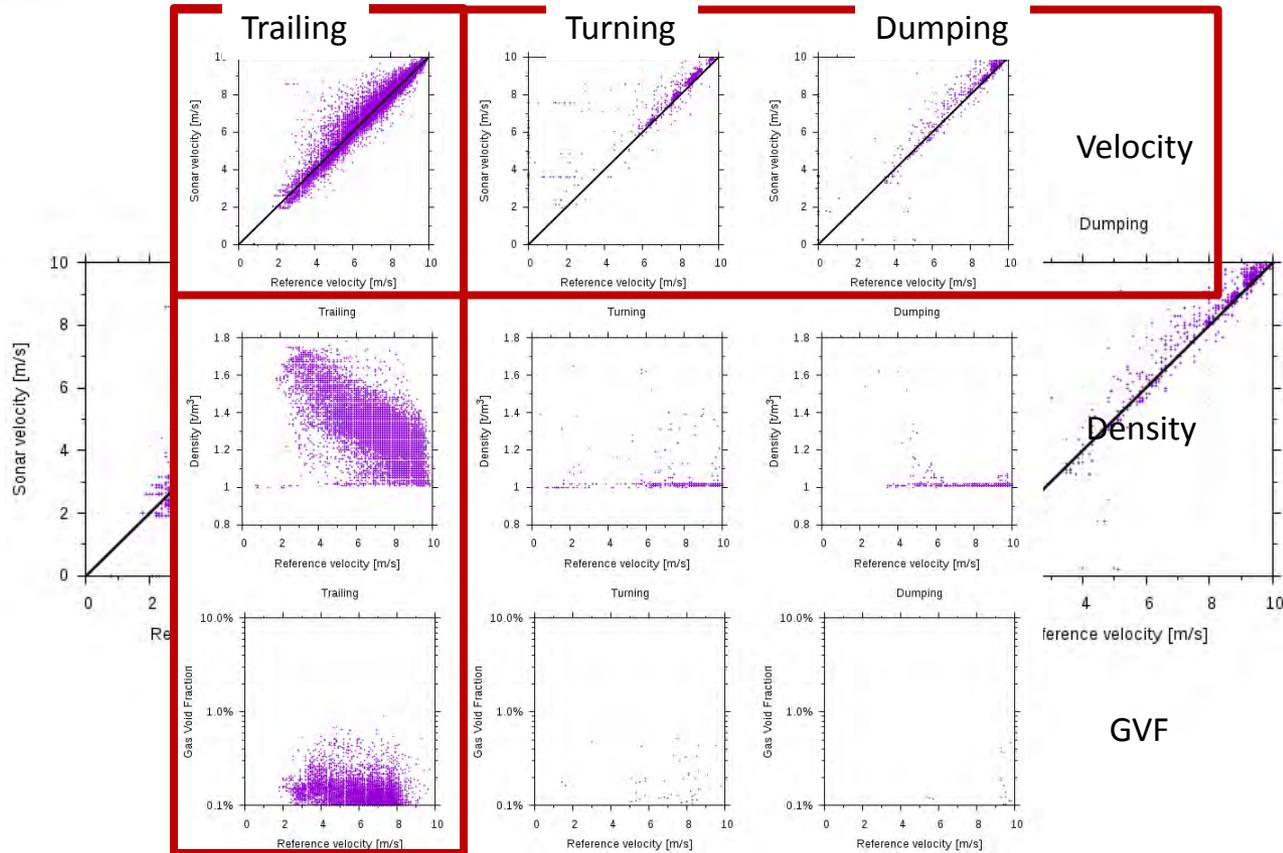
- Installation during bunkering stop
  - Under 6 hours
  - Crew of 2
- Using existing piping work only
  - 44° inclined pipe
  - 10 D from pump discharge
  - Encroaching deck level
- Reference is existing mixture velocity meter
  - Orientation effects
  - Fast flow and density fluctuations
  - Low discharge pressure
  - Gas content
- Dynamic evaluation only
  - Compensation for remaining delays
  - Mixture velocity is most important
  - Vessel status conditioned comparison (Trailing, Turning, Dumping)



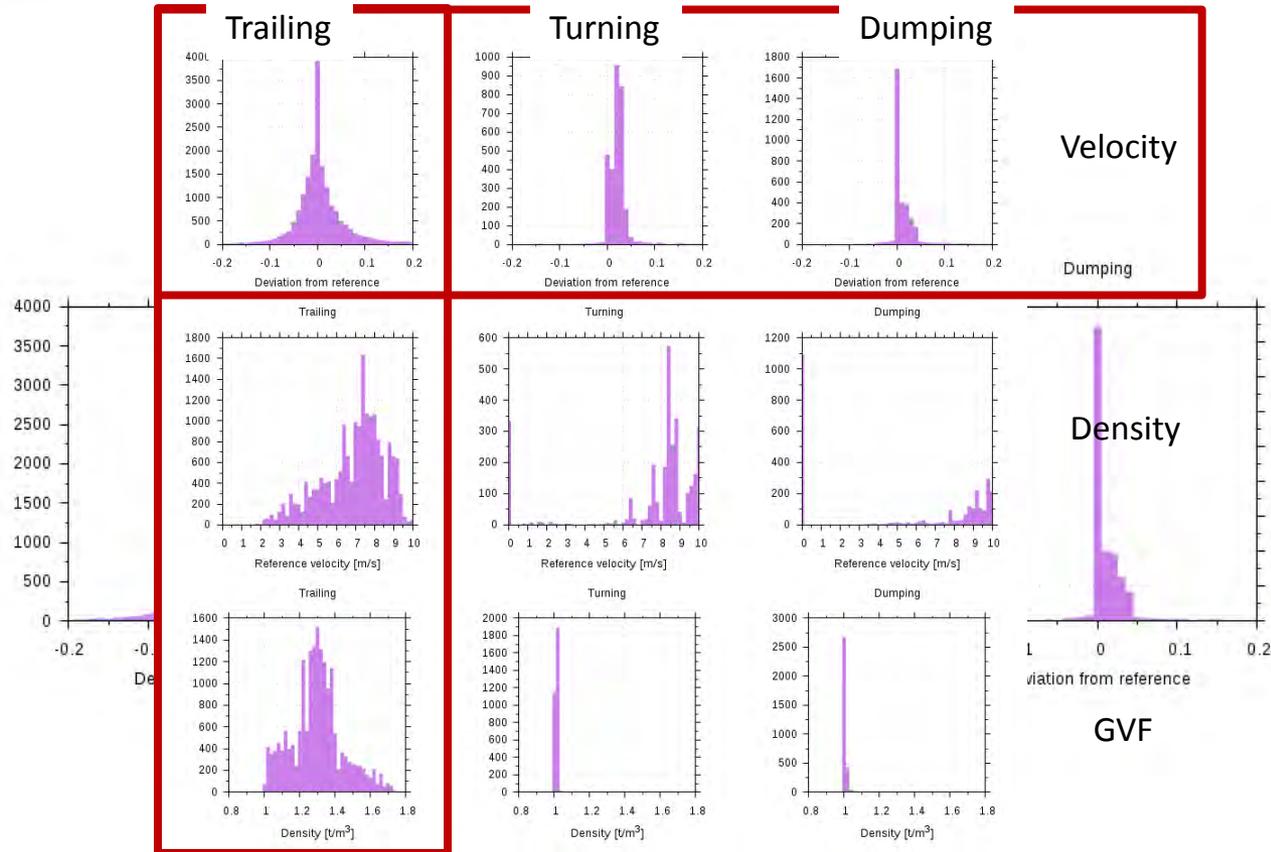
## Sand



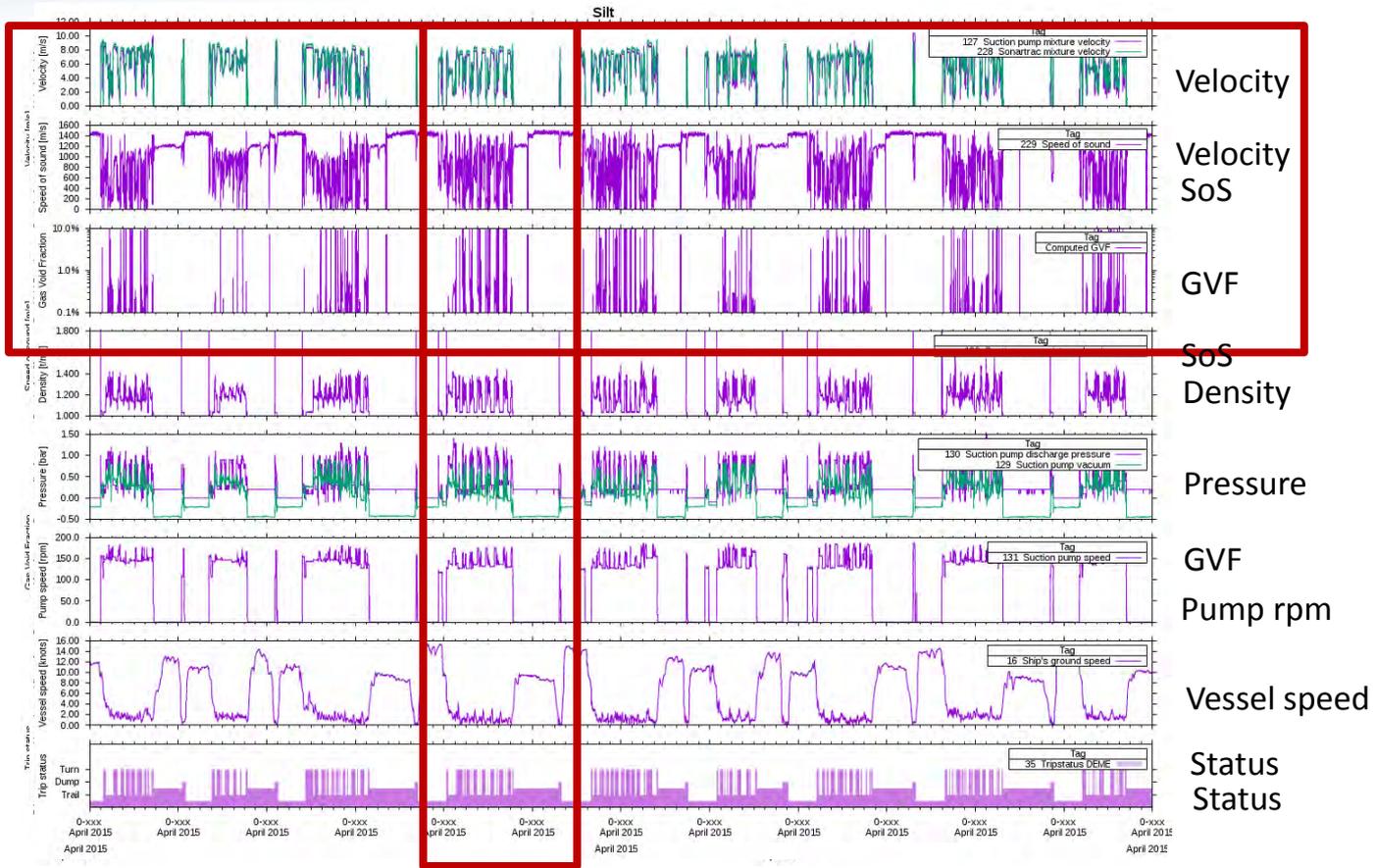
## Sand



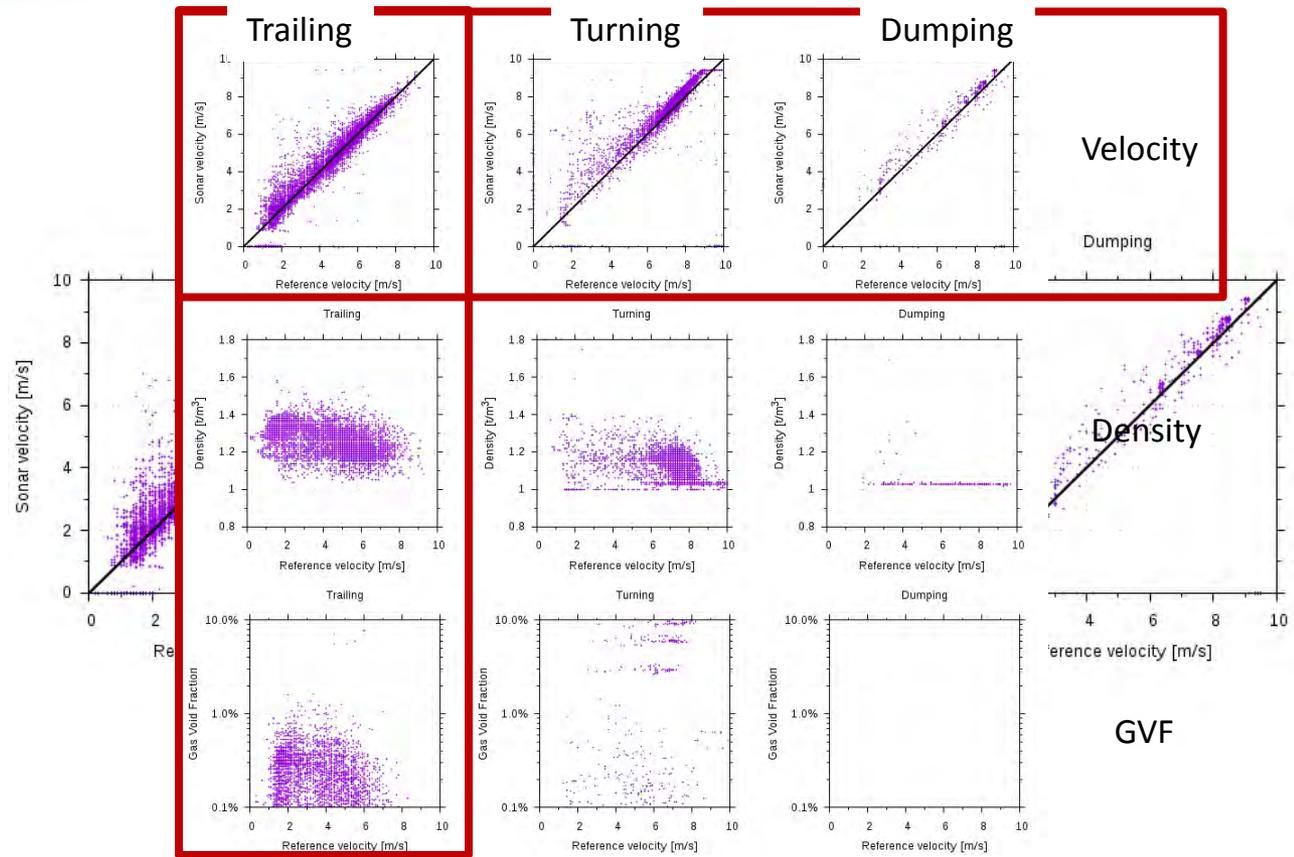
## Sand



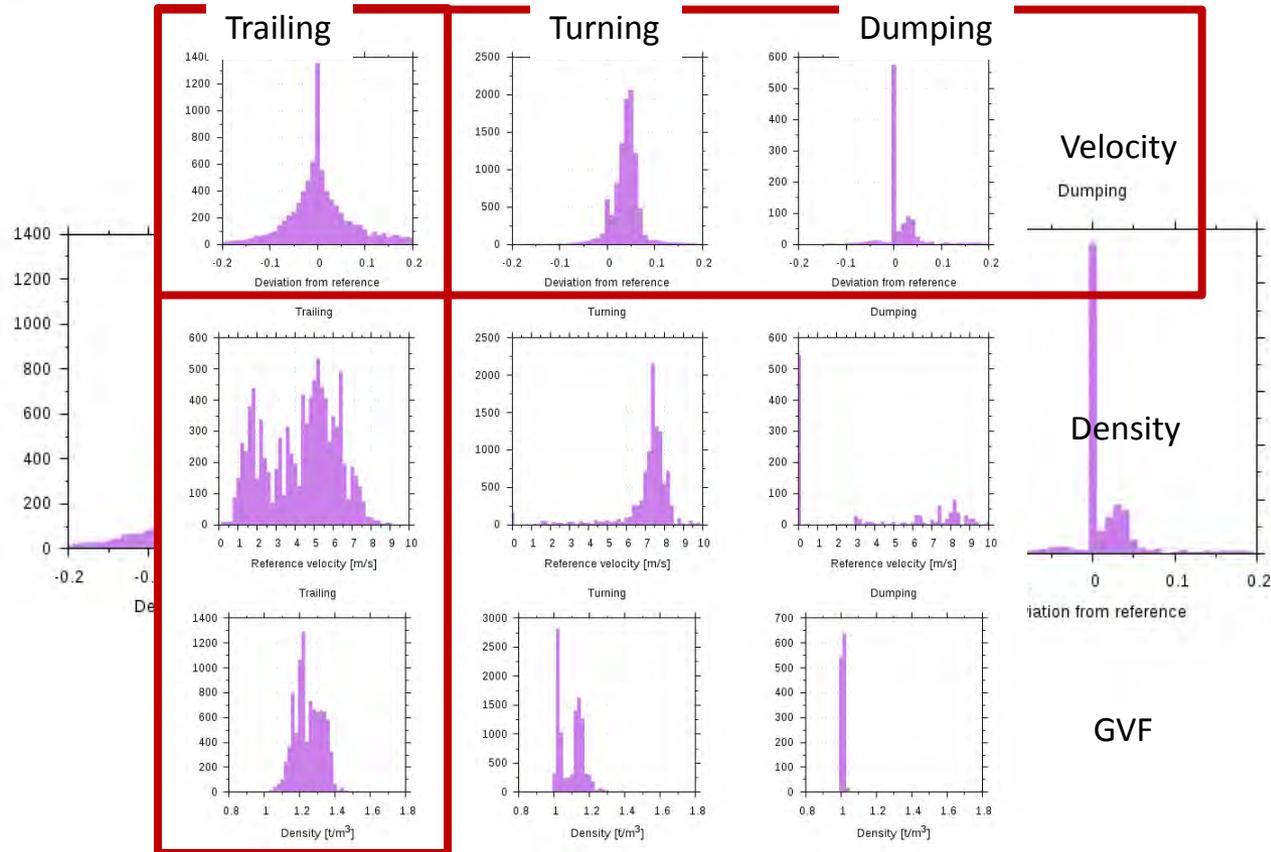
## Silt



## Silt



## Silt



## Conclusions

- No contact with the slurry
- Easy and safe to install
- Free from measurement drift
- Highly accurate
- Short response time
- Gas content capability

**Thank You**