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## Response of FPSO Systems to Squalls

OMAE June 22, 2011

SOFEC

#### Conclusions

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- If there is no correlation between the rise time and the peak wind speed, is it physically correct to scale only peak velocity?
- Stiff, lightly damped mooring systems are more sensitive to the duration and gustiness of the velocity ramp.
- For turret moored vessels, both the variability in the wind direction and rise time have a large influence on the response.
- For the system studied, the difference between the 100-year offset and the maximum offset to a 100-year squall is insignificant.
- Data on direction of peak wind speed is needed to get a better picture of responses to squalls.

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#### Scaling of wind speed









#### **Synthetic Squall - Definition**





#### Synthetic vs actual squall time series





#### **Response of SDOF**



#### **Response of SDOF**



















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## Thank you.