

## Accepted Manuscript

Experimental Evaluation of Marangoni Stress and Surfactant Concentration at Interface of Contaminated Single Spherical Drop Using Spatiotemporal Filter Velocimetry

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PII: S0301-9322(17)30031-9  
DOI: [10.1016/j.ijmultiphaseflow.2017.08.007](https://doi.org/10.1016/j.ijmultiphaseflow.2017.08.007)  
Reference: IJMF 2632



To appear in: *International Journal of Multiphase Flow*

Received date: 19 January 2017  
Revised date: 11 July 2017  
Accepted date: 11 August 2017

Please cite this article as: Shigeo Hosokawa , Yuya Masukura , Kosuke Hayashi , Akio Tomiyama , Experimental Evaluation of Marangoni Stress and Surfactant Concentration at Interface of Contaminated Single Spherical Drop Using Spatiotemporal Filter Velocimetry, *International Journal of Multiphase Flow* (2017), doi: [10.1016/j.ijmultiphaseflow.2017.08.007](https://doi.org/10.1016/j.ijmultiphaseflow.2017.08.007)

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**Highlights**

- Spatiotemporal filter velocimetry is extended to boundary–fitted measurement regions (BF-SFV).
- BF-SFV enables us to measure velocity distribution in the vicinity of an interface accurately.
- Interfacial velocity and interfacial shear stress can be evaluated from the measured velocity distribution.
- Distributions of the Marangoni stress, interfacial tension and surfactant concentration at the interface are successfully estimated from the accurate velocity distributions.

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