

# Reduced Order methods for fluid-structure interaction parametric problems: state of the art and perspectives

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We describe the state of the art and perspectives in the developments of reduced order methods for parametric fluid-structure interaction problems by monolithic [1] and segregated approaches [2], as well as the use of numerical techniques to enhance the reduction of the Kolmogorov n-width to improve computational performances [3]. Special attention is dedicated to the approximation stability of the reduced order model, as well as to the imposition of accurate and efficient coupling conditions. Joint work with Monica Nonino, Francesco Ballarin (SISSA) and Yvon Maday (Paris LJLL).

## REFERENCES

- [1] Ballarin F. and Rozza G., POD-Galerkin monolithic reduced order models for parametrized fluid-structure interaction problems. *IJNMF*: 82(12):1010–1034, 2016.
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- [3] Nonino M., Ballarin F., Rozza G. and Maday Y., *Enhancing the reduction of the Kolmogorov n-width: application to fluid dynamic and fluidstructure interaction problems*, submitted 2019.