



Published on *CD-adapco* (<http://www.cd-adapco.com>)

[Home](#) > Diagnosing Contributions to Interior Noise due to Exterior Flows modeled with STAR-CCM+

Diagnosing Contributions to Interior Noise due to Exterior Flows modeled with STAR-CCM+



The prediction of the transmission of noise and vibration through a structure, due to excitation by an unsteady flow across various surfaces of the structure, is often referred to as aero-vibro-acoustics.

Aero-vibro-acoustic applications are encountered in many different industries, including, for example, automotive interior wind noise associated with side mirror and underbody sources, launch vehicle interior noise and vibration induced by exterior fluctuating pressure loads on the fairing, aircraft interior noise associated with boundary layer and antenna wakes, and fan noise from electronic products associated with disturbed flows within an enclosure.

This presentation provides an example of interior noise generated by an exterior flow. The exterior flow is modeled with STAR-CCM+ and the vibro-acoustic response to that flow is modeled using a combination of vibro-acoustic methods (in particular, Finite Elements and Statistical Energy Analysis). The various physical mechanisms that contribute to the interior noise are discussed and numerical examples are presented.

Author Company:

CD-adapco

Author Name:

Philip Shorter

Industries:

Products:

Conference:

[STAR Global Conference 2013](#)^[2]

CD-adapco is the world's largest independent CFD focused provider of engineering simulation software, support and services. We have over 30 years of experience in delivering industrial strength engineering simulation.

Source URL: <http://www.cd-adapco.com/presentation/diagnosing-contributions-interior-noise-due-exterior-flows-modeled-star-ccm>

Links:

[1] http://www.cd-adapco.com/sites/default/files/Presentation/2_CD-adapco_PS.pdf

[2] <http://www.cd-adapco.com/conference/star-global-conference-2013>