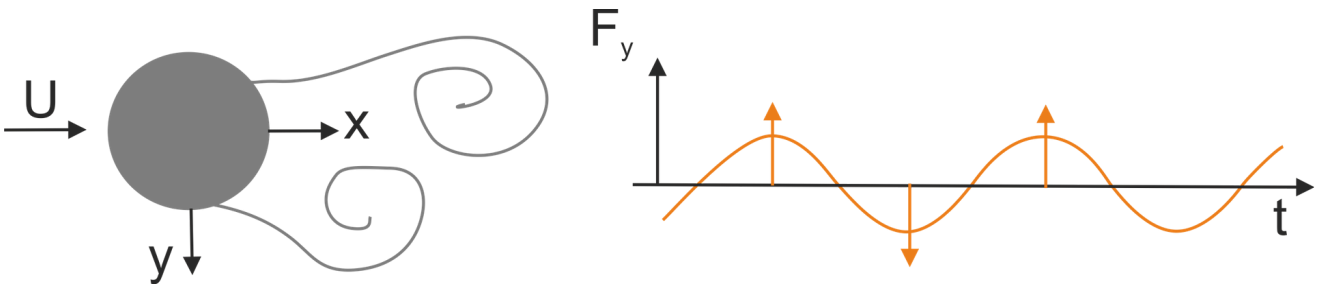
DOS : Flow induced vibrations

Number of participants: 9

1. Which type of flow induced vibrations does this schematic represent ?

6 respondents



vortex

Vortex (dynamic excitation)

Vortex

Alternating vortices

turbulent flow

Vortex

2. Vortex induced vibrations is caused by

2 correct answers
out of 5 respondents

	A turbulent flow	40%	2 votes
✓	A constant flow	40%	2 votes
	Either a constant or a turbulent flow	20%	1 vote

3. When a cylinder is excited by VIV it vibrates in the direction

6 correct answers
out of 6 respondents

	of the flow	0%	0 votes
	which depends on the shape of the object	0%	0 votes
✓	perpendicular to the flow	100%	6 votes

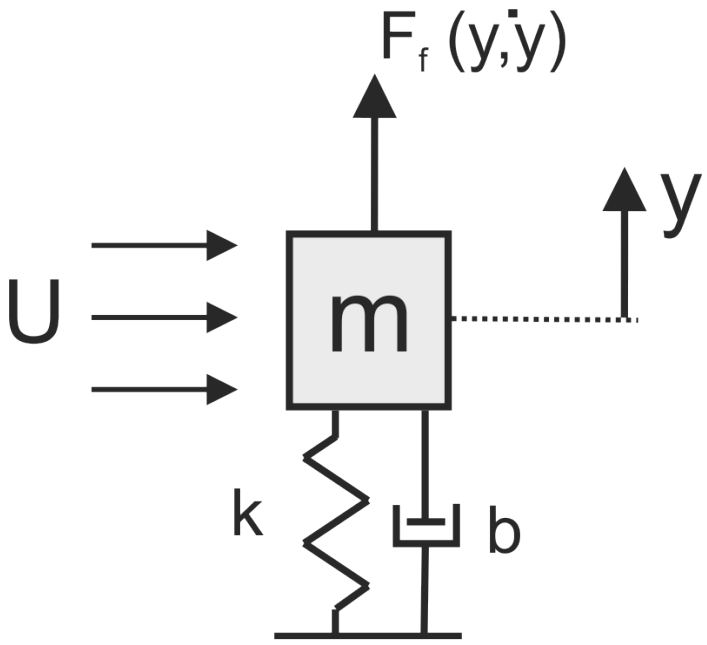
4. Which statements about VIV are correct? (Multiple answers may apply)

3 correct answers
out of 7 respondents

	VIV only occurs for cylindrical structures	0%	0 votes
	VIV is an instability of the system	29%	2 votes
✓	The vortex shedding frequency depends on the wind speed	100%	7 votes
	The vortex shedding frequency depends on the resonance frequency of the structure	0%	0 votes
✓	Tall and slender towers (such as chimney's) are susceptible to VIV as their natural frequencies can match the vortex shedding frequency at certain wind speeds	86%	6 votes
		29%	2 votes

5. In self-excited vibrations, the force Ff due to the flow is a function of

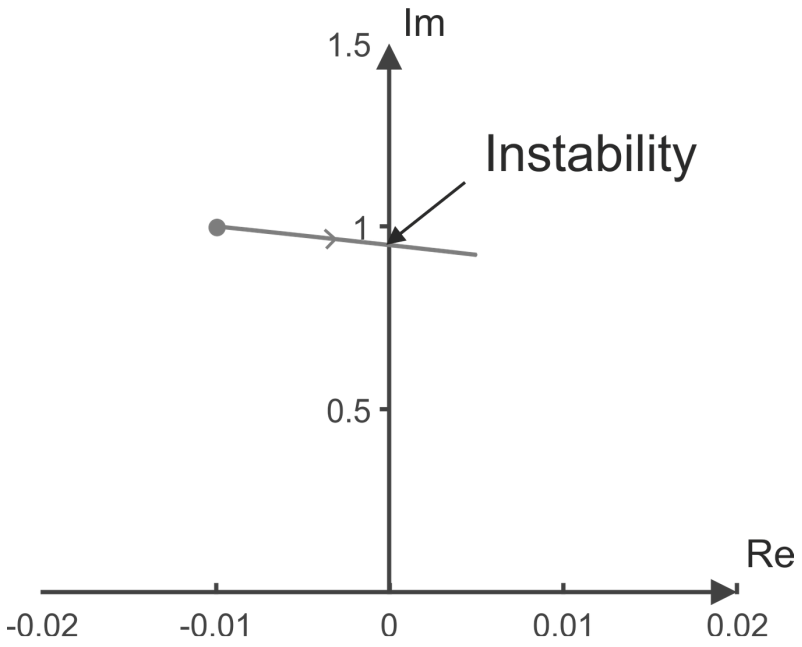
7 correct answers
out of 7 respondents



	the displacement of the flexible object	0%	0 votes
	the velocity of the flexible object	0%	0 votes
✓	both the displacement and the velocity of the flexible object	100%	7 votes

6. This is an example of

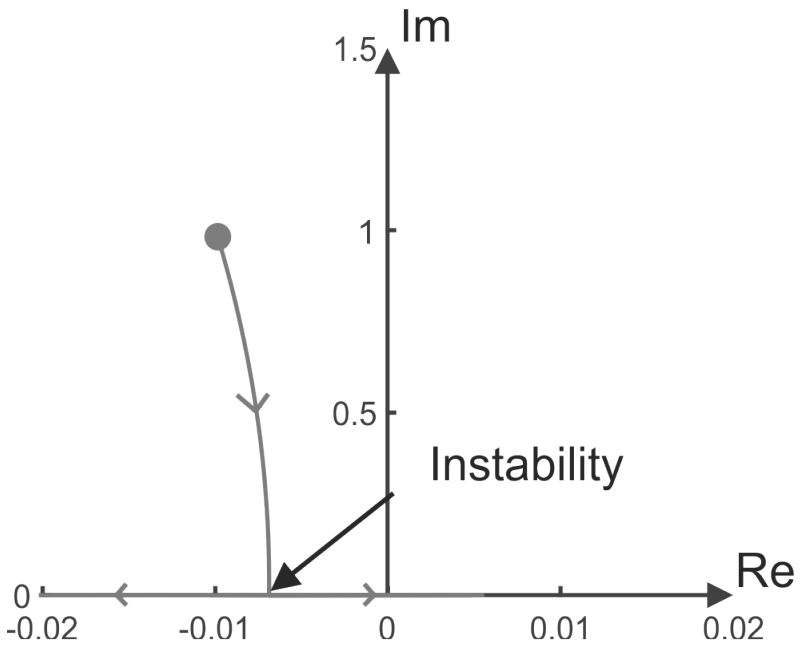
7 correct answers
out of 7 respondents



✓	Galopping	100%	7 votes
	Divergence	0%	0 votes
	VIV	0%	0 votes

7. This is an example of instability in the form of

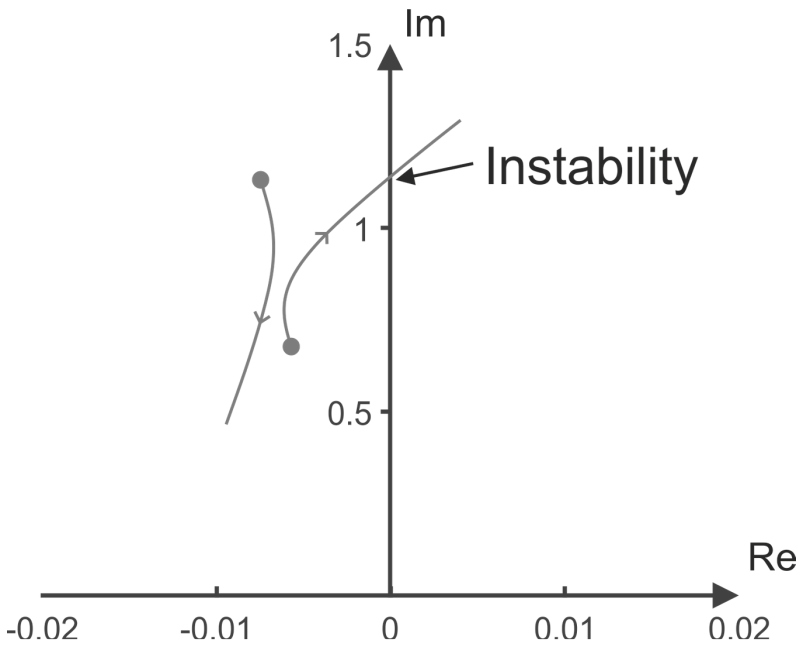
4 correct answers
out of 5 respondents



	Galopping	0%	0 votes
✓	Divergence	80%	4 votes
	Coupled mode flutter	20%	1 vote

8. This is an example of instability in the form of

7 correct answers
out of 7 respondents



	Galopping	0%	0 votes
	Divergence	0%	0 votes
✓	Coupled mode flutter	100%	7 votes