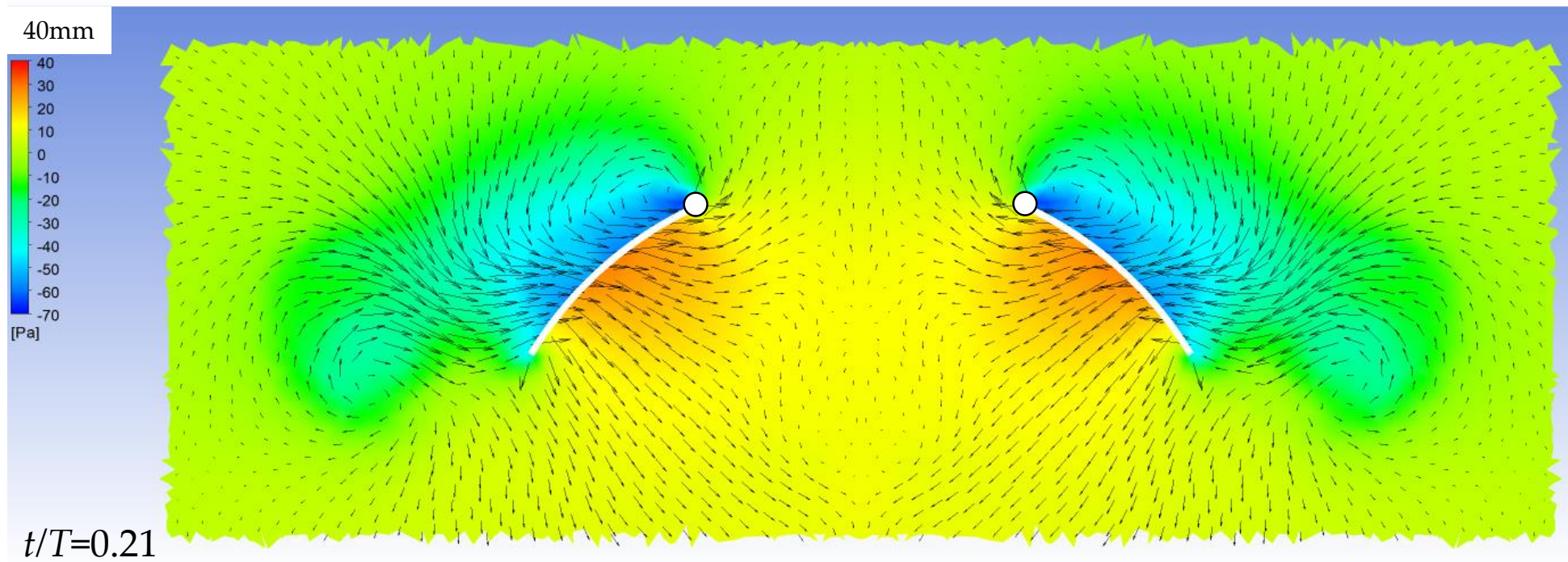
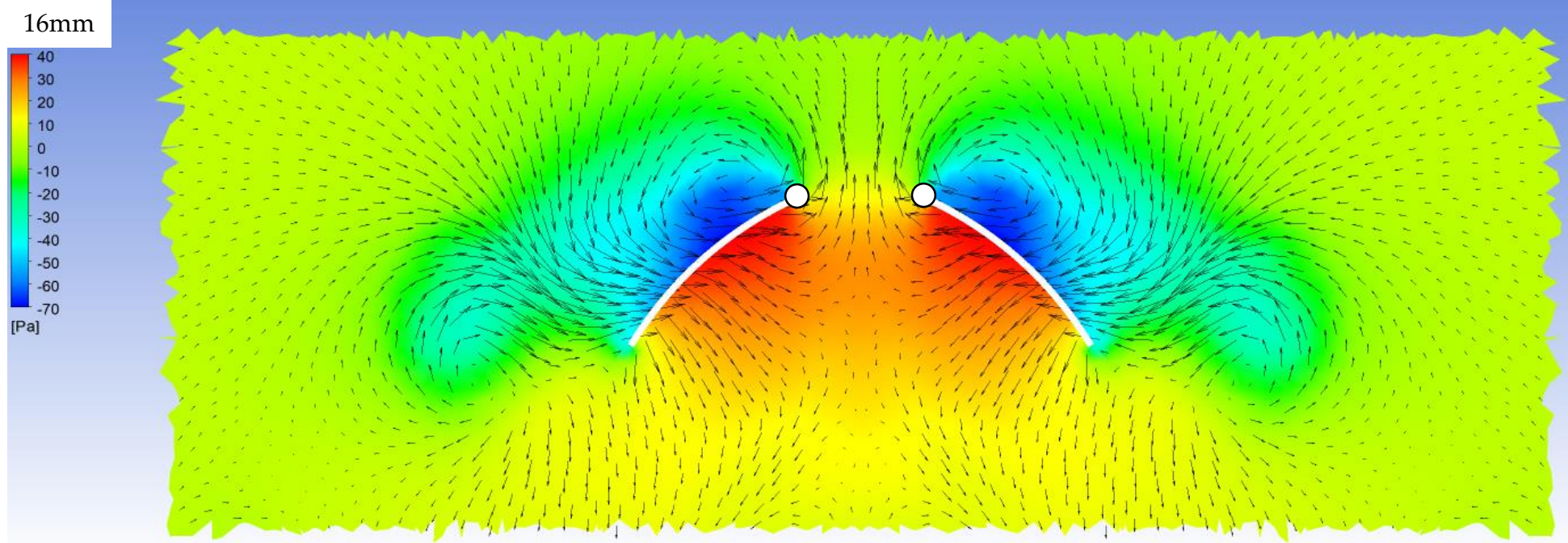
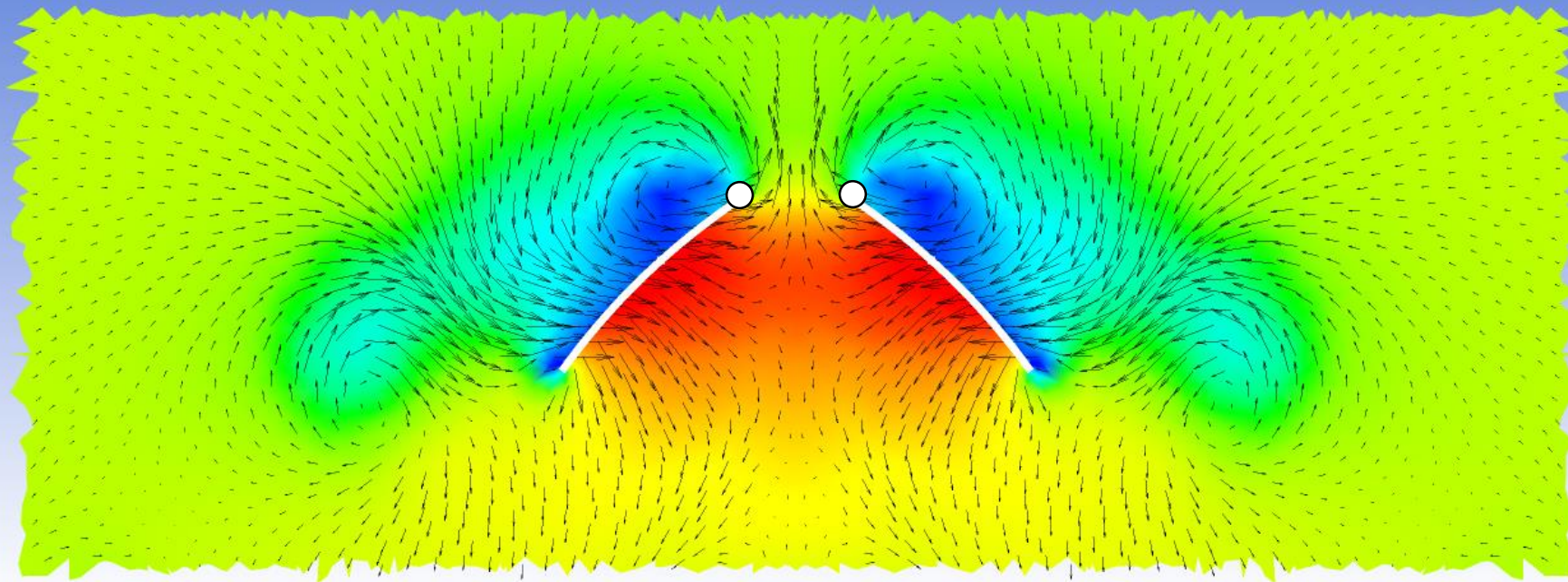
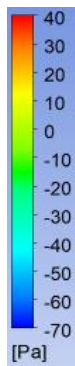


Figure S1: Flow fields in 75% R -plane during down-stroke reversal for $J = 0$. The white curves are the intersections between the wings and the plane, representing wing sections. The leading edges are marked with white circles.



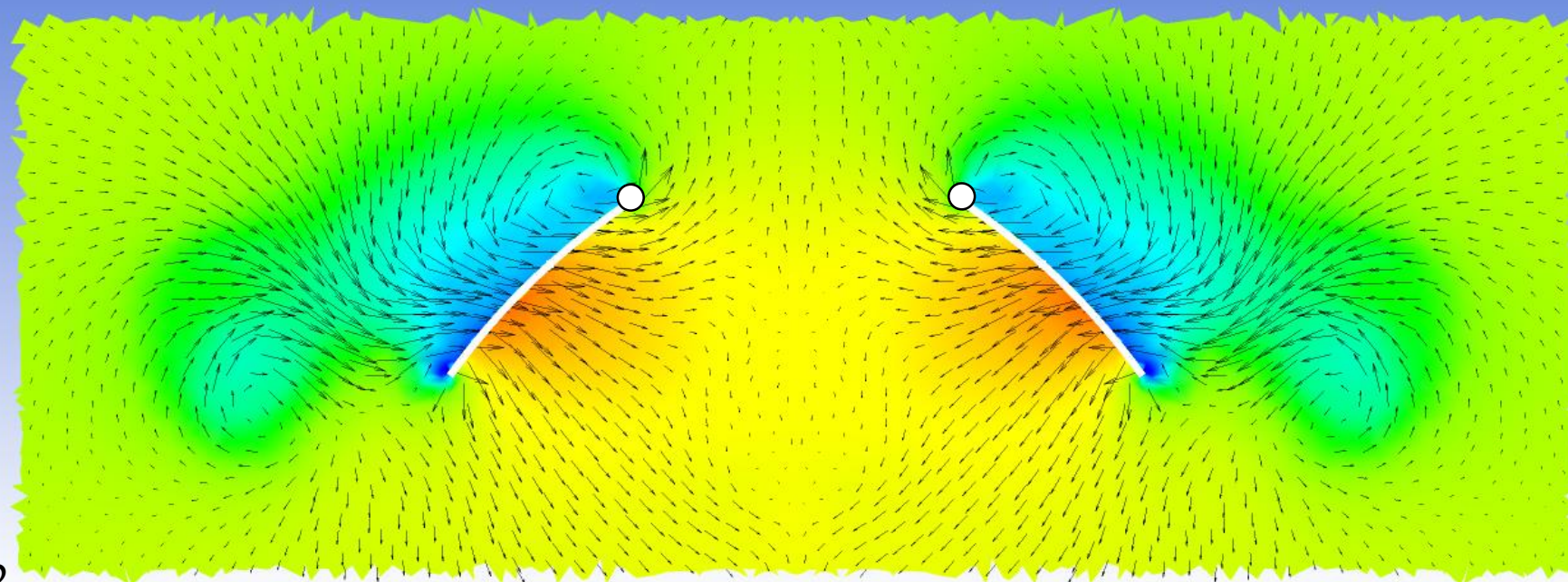
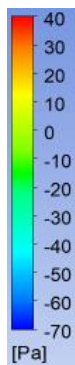
16mm



ANSYS
R16.2
Academic



40mm

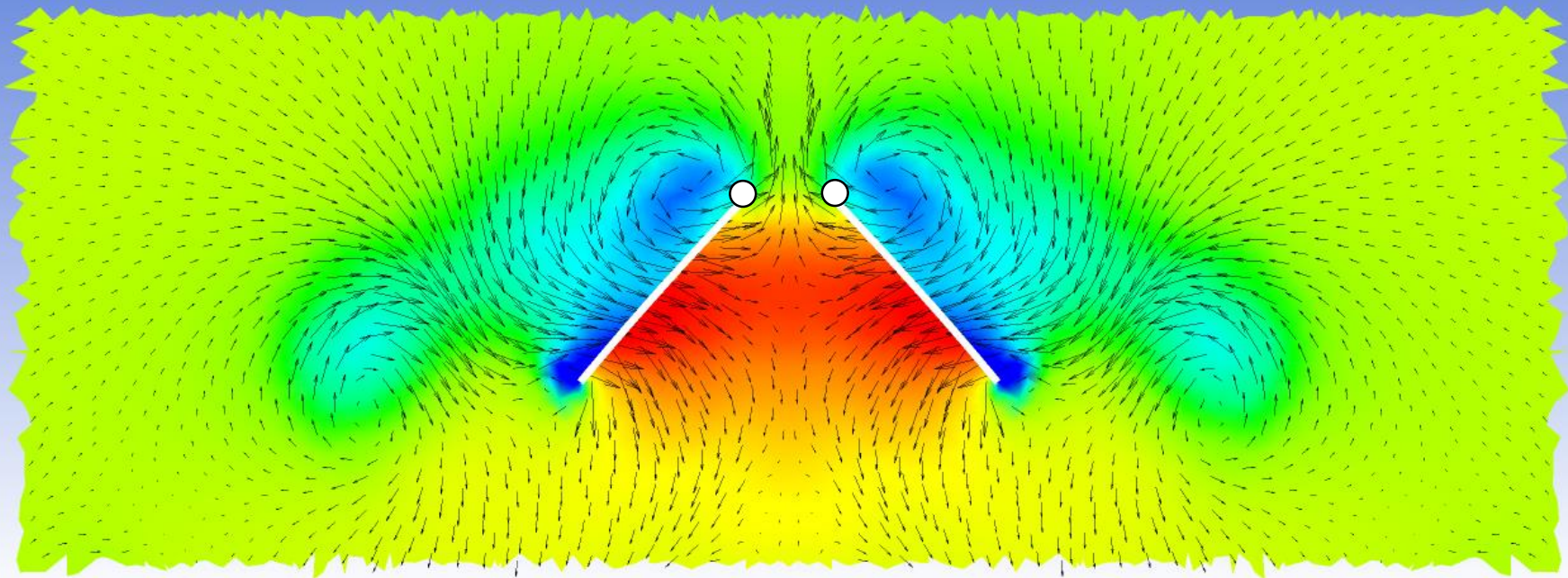
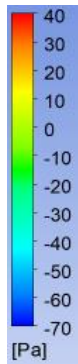


ANSYS
R16.2
Academic



$t/T=0.22$

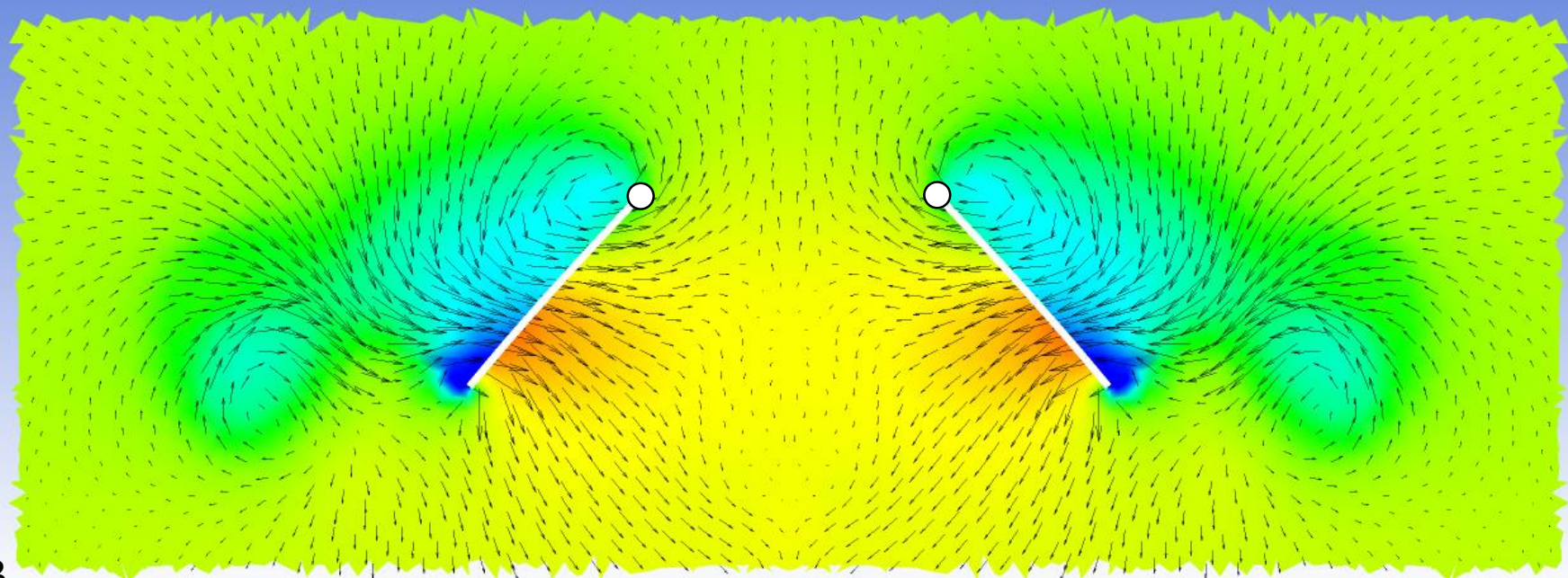
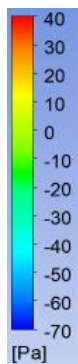
16mm



ANSYS
R16.2
Academic



40mm

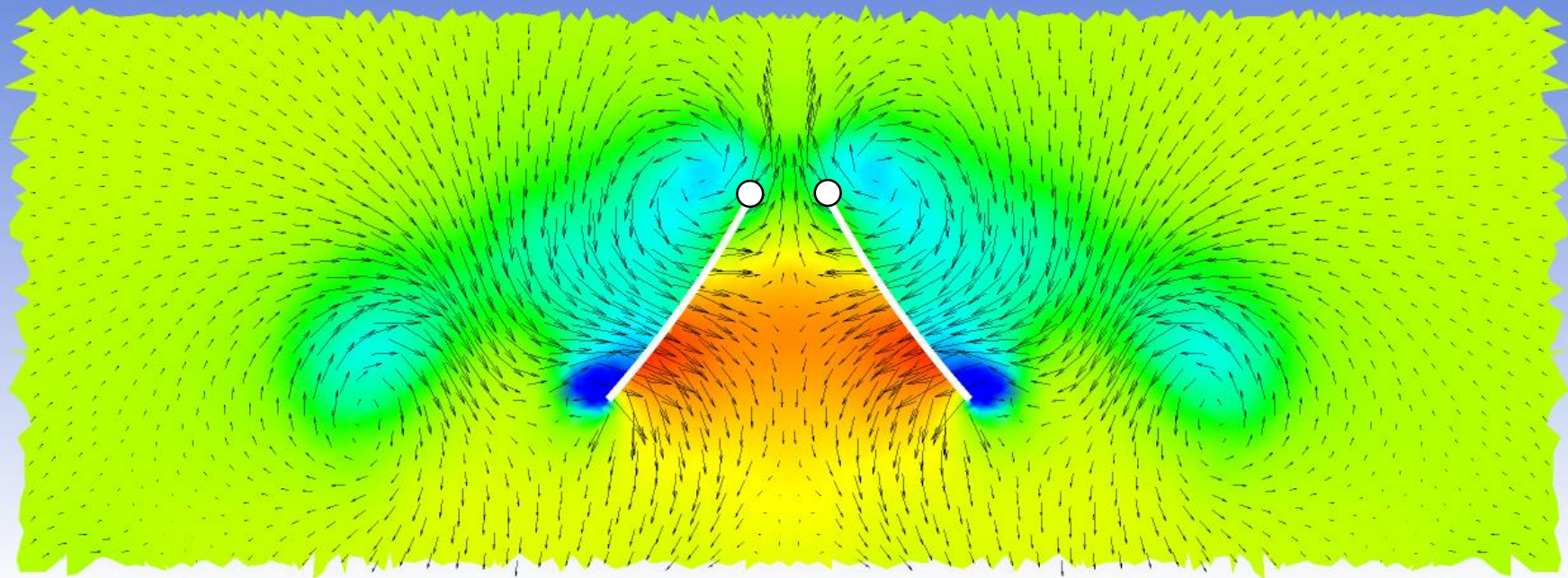
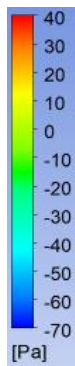


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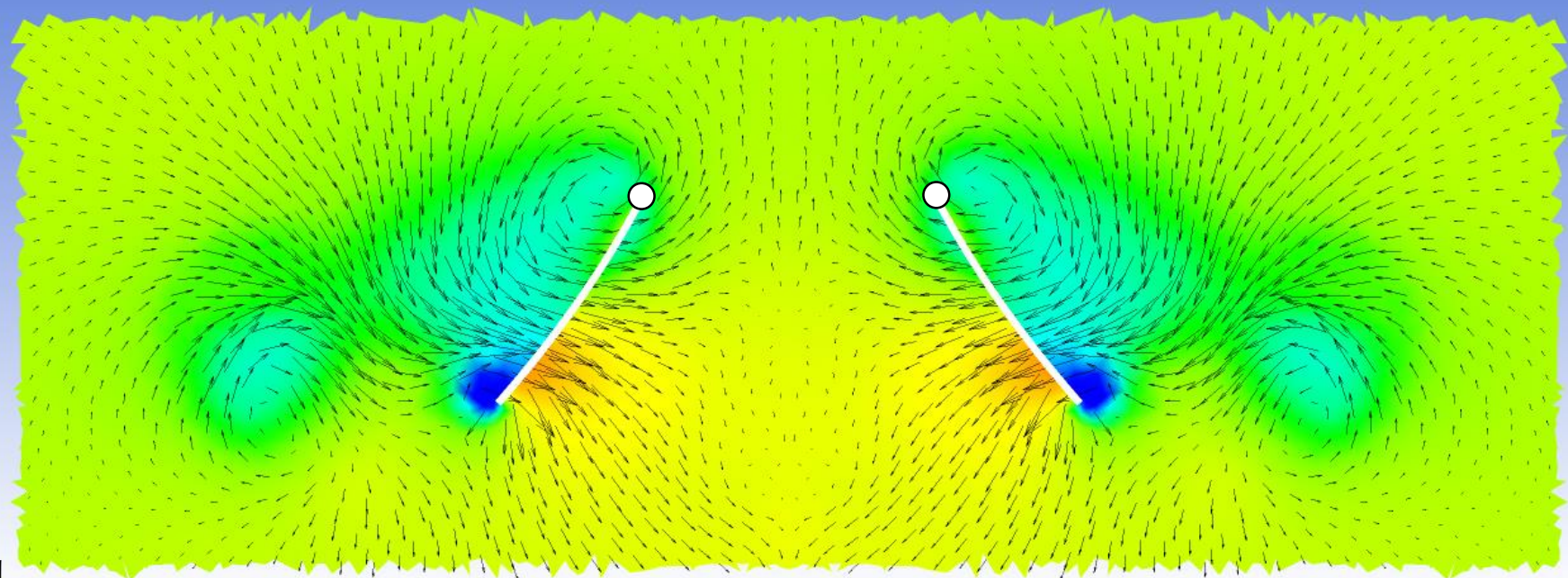
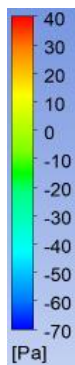


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16mm

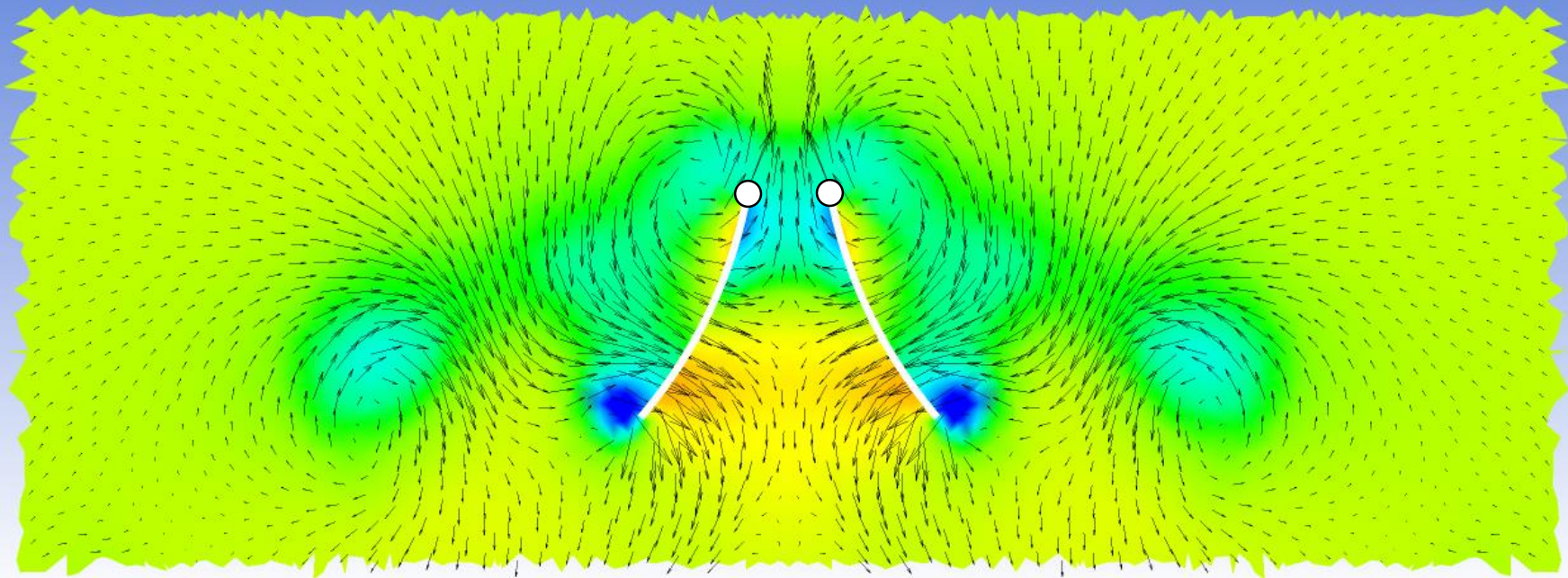
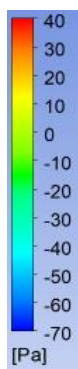


40mm

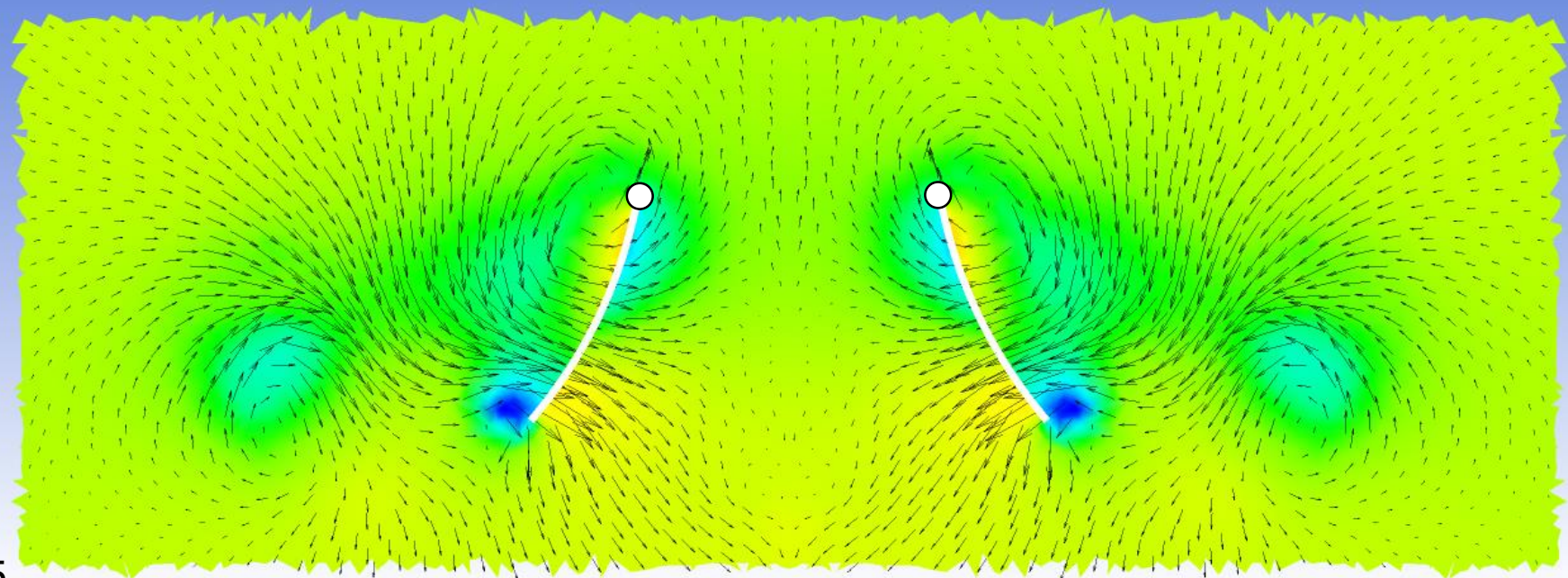
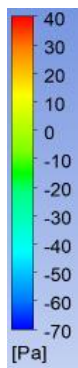


$t/T=0.24$

16mm

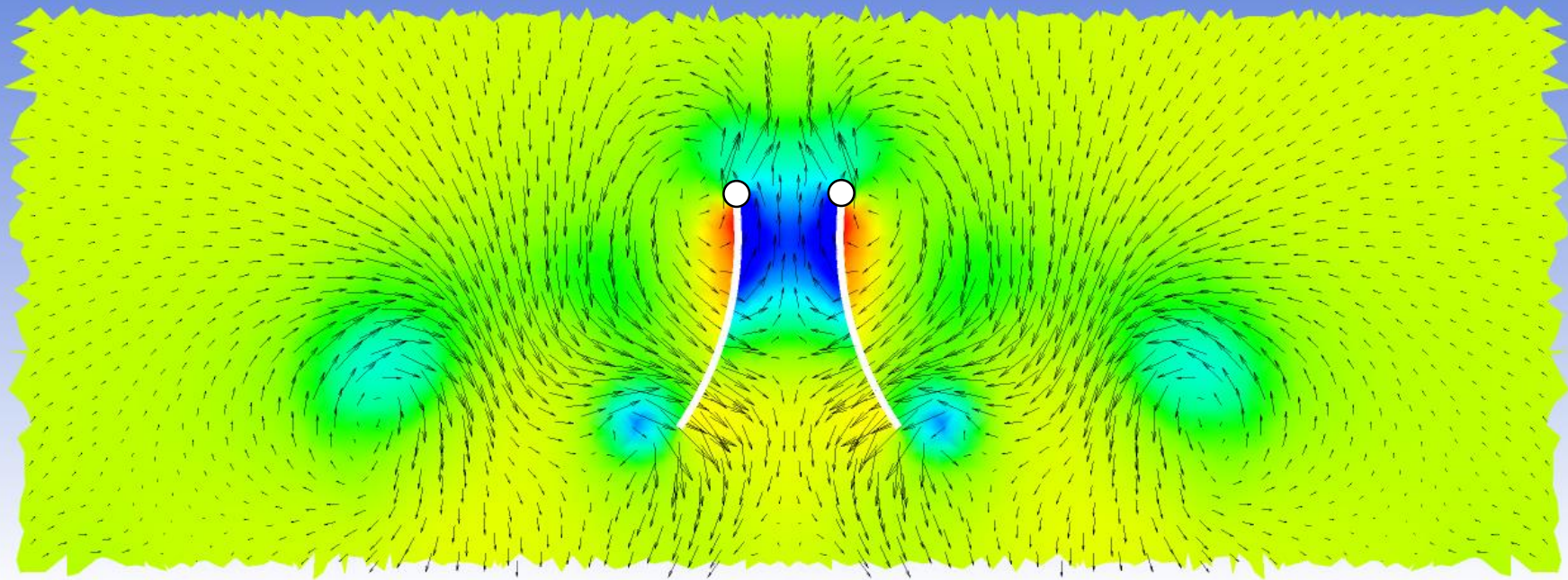
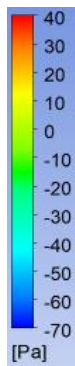


40mm



$t/T=0.25$

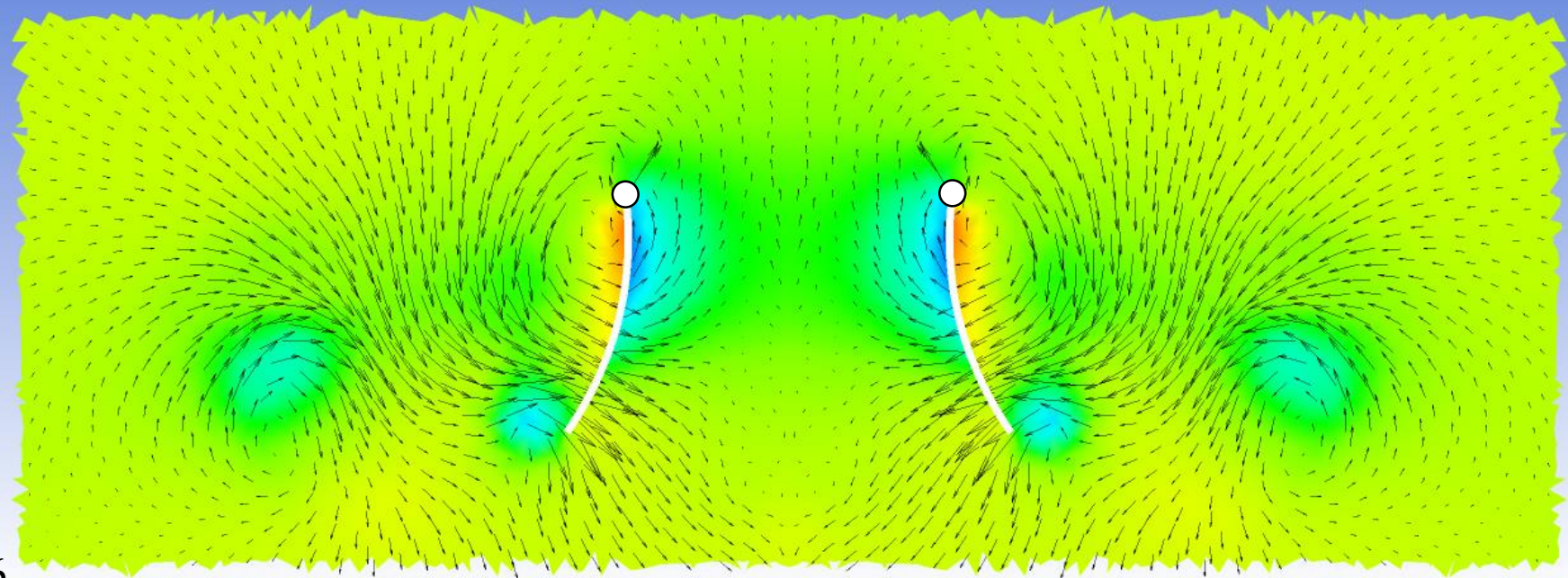
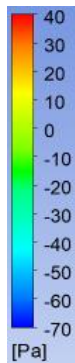
16mm



ANSYS
R16.2
Academic



40mm

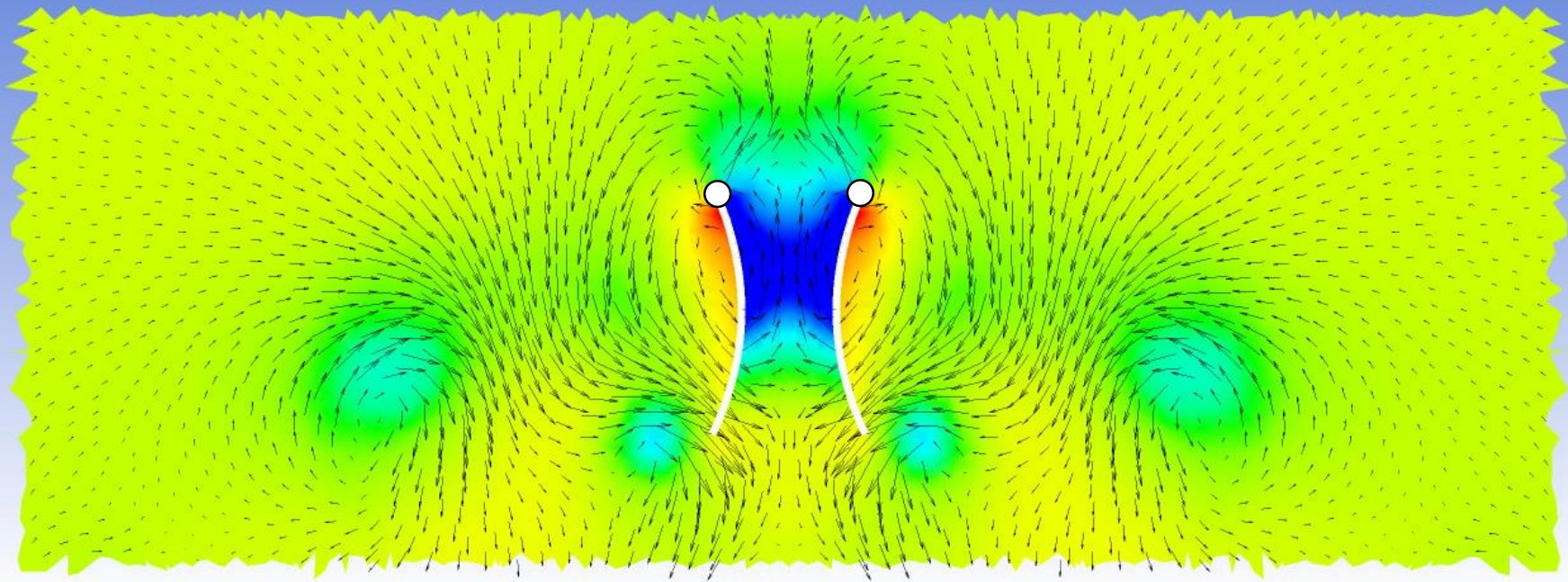
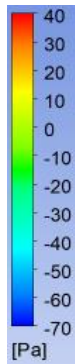


ANSYS
R16.2
Academic



$t/T=0.26$

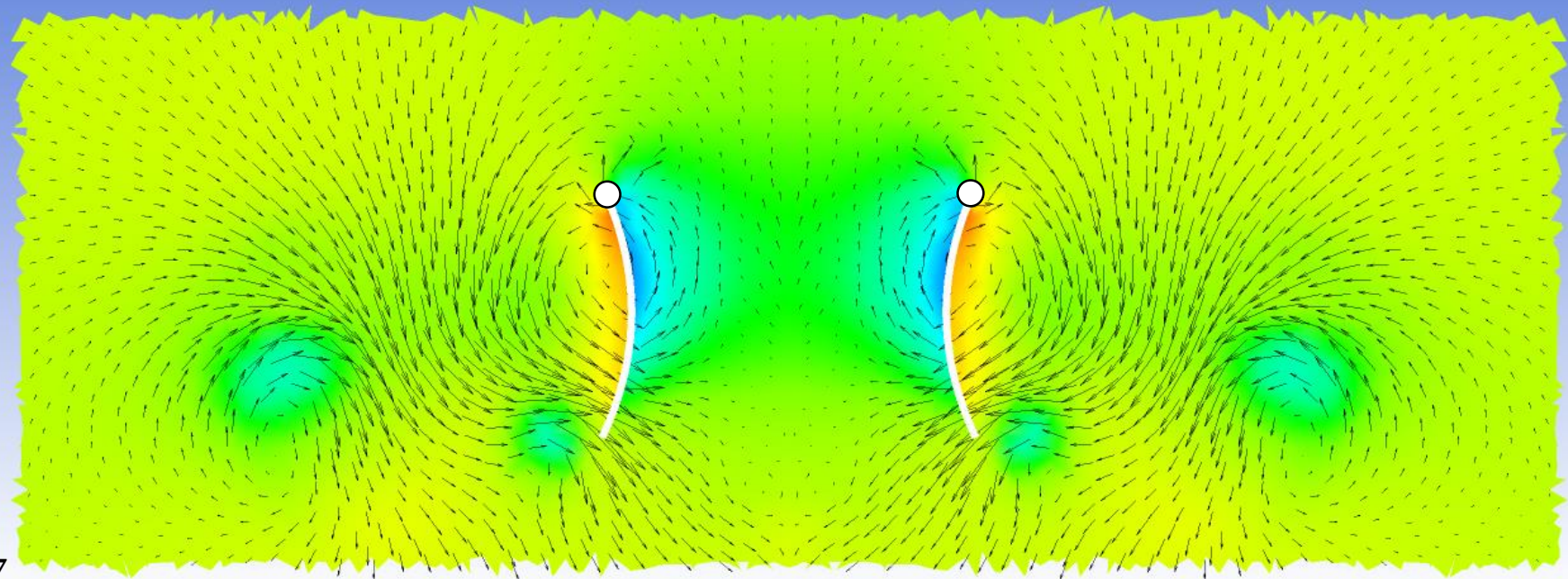
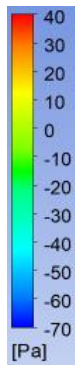
16mm



ANSYS
R16.2
Academic



40mm

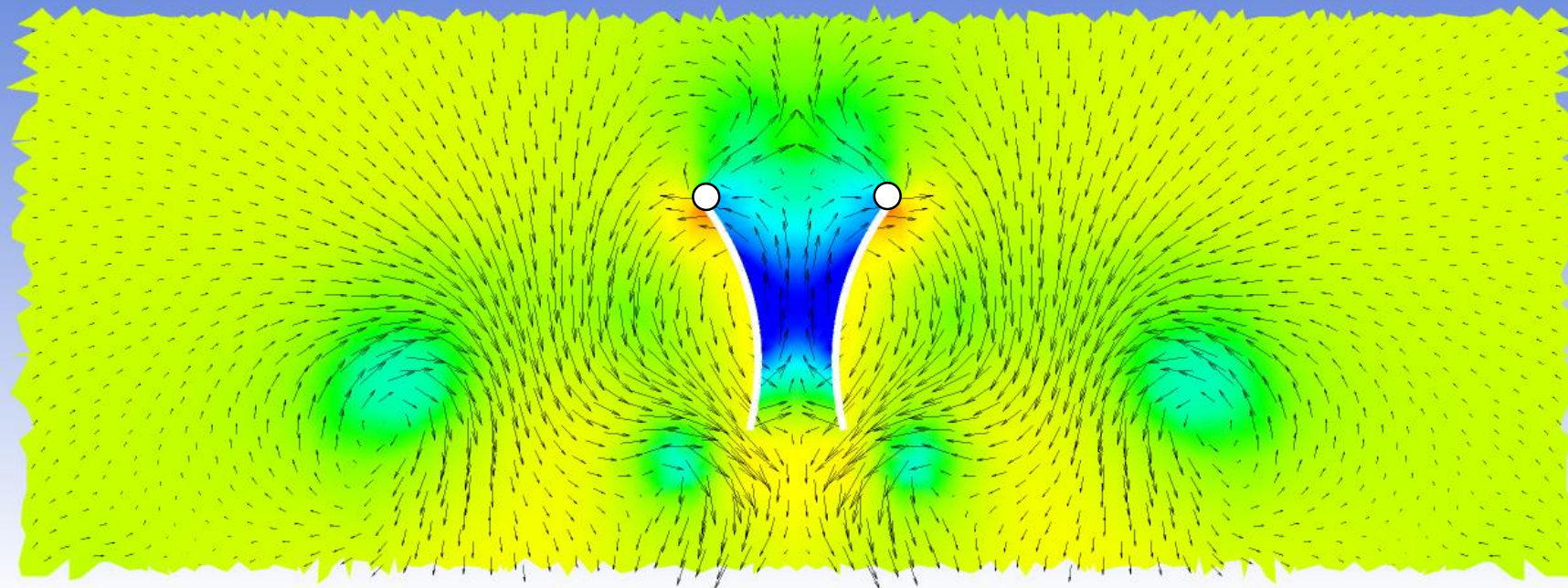
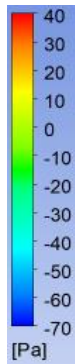


ANSYS
R16.2
Academic



$t/T=0.27$

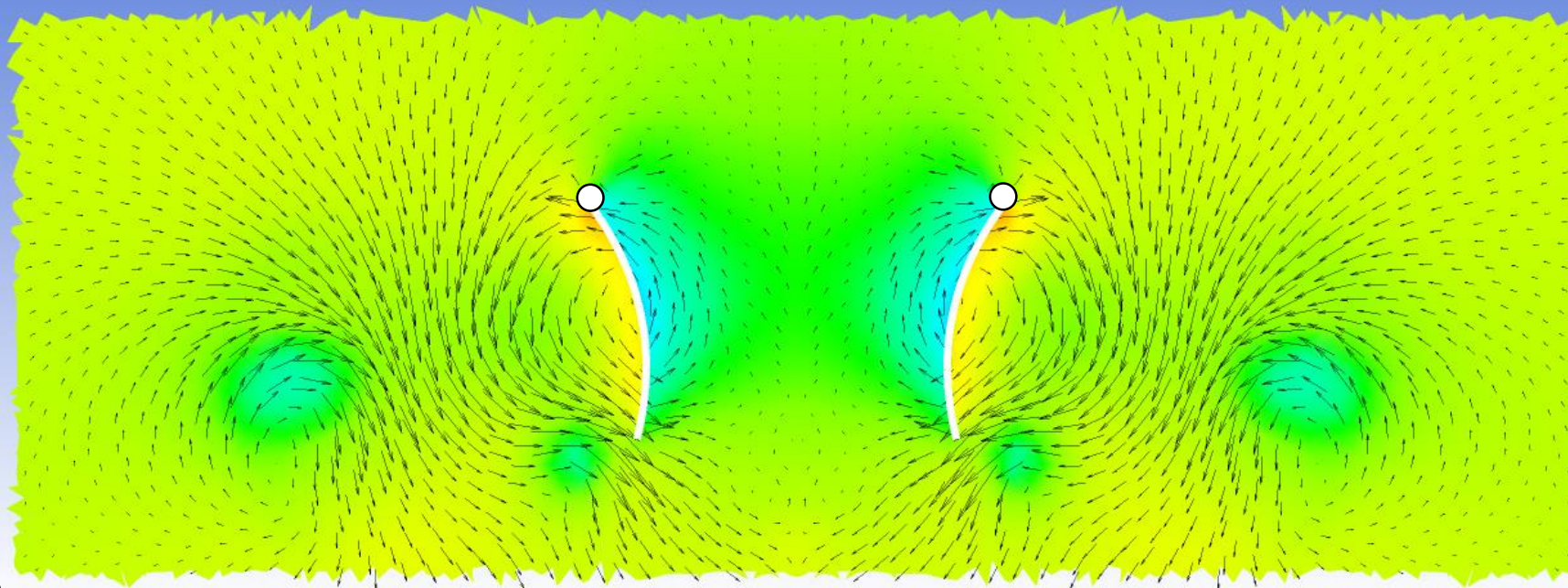
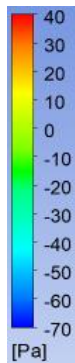
16mm



ANSYS
R16.2
Academic



40mm

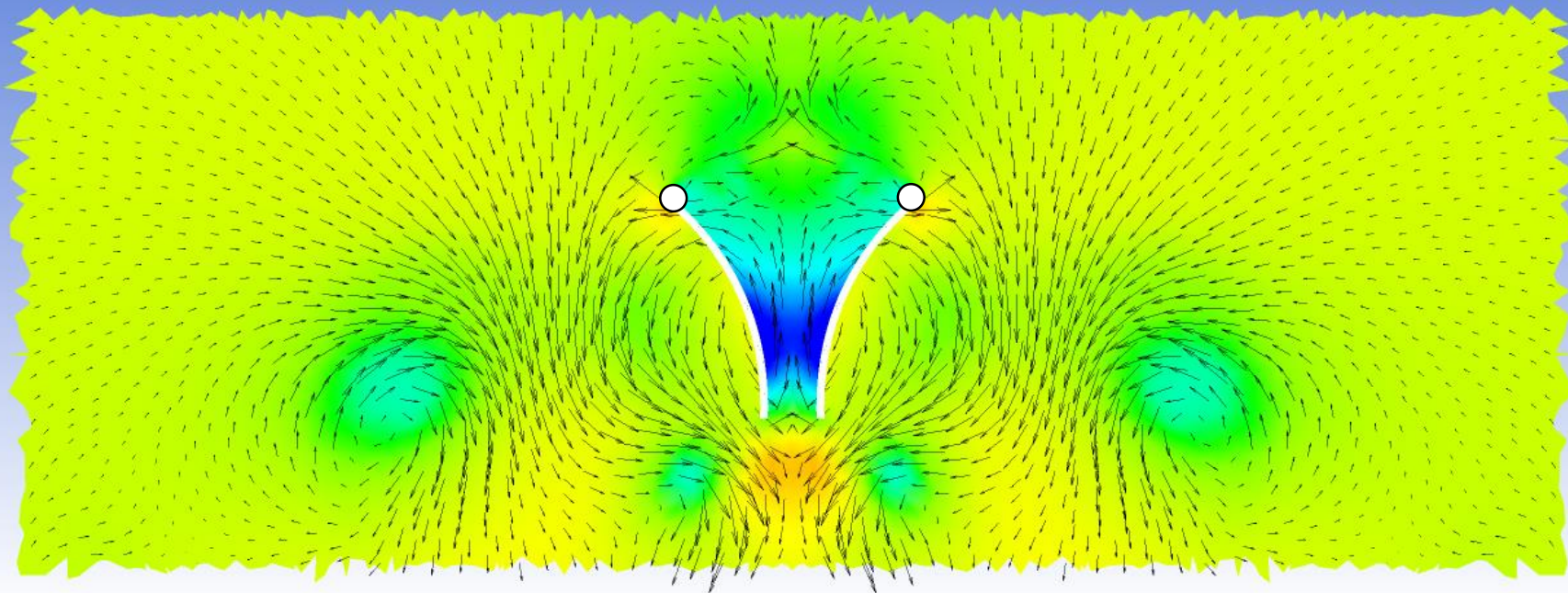
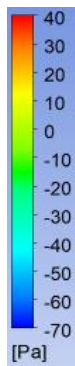


ANSYS
R16.2
Academic



$t/T=0.28$

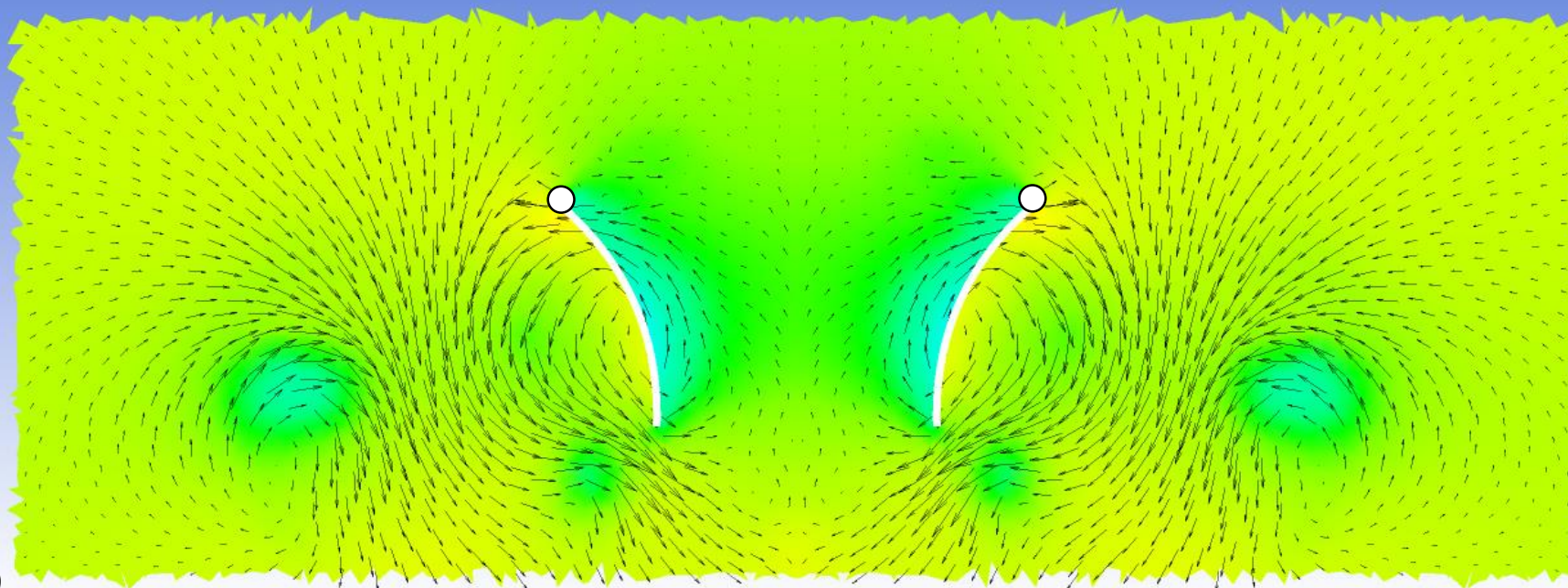
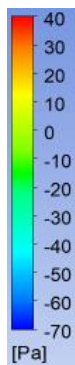
16mm



ANSYS
R16.2
Academic



40mm

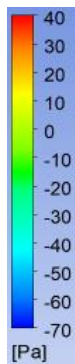


ANSYS
R16.2
Academic

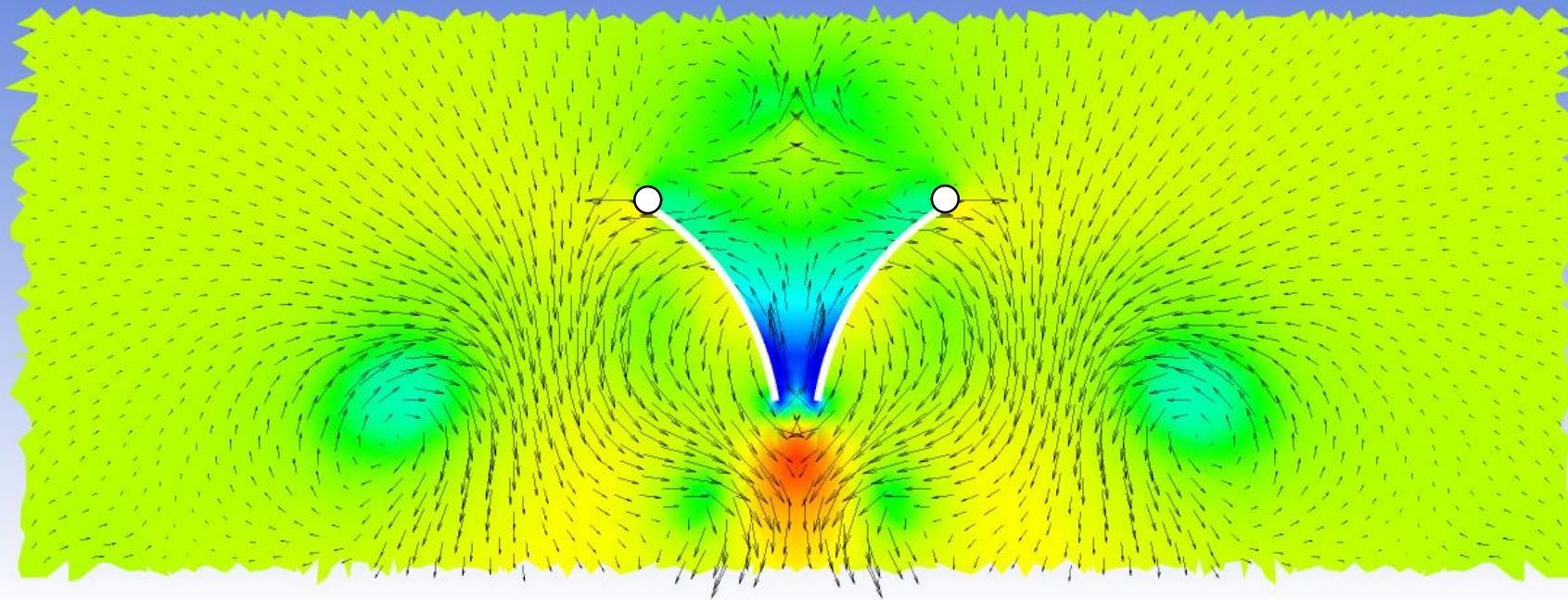


$t/T=0.29$

16mm



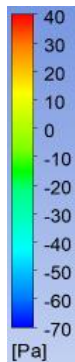
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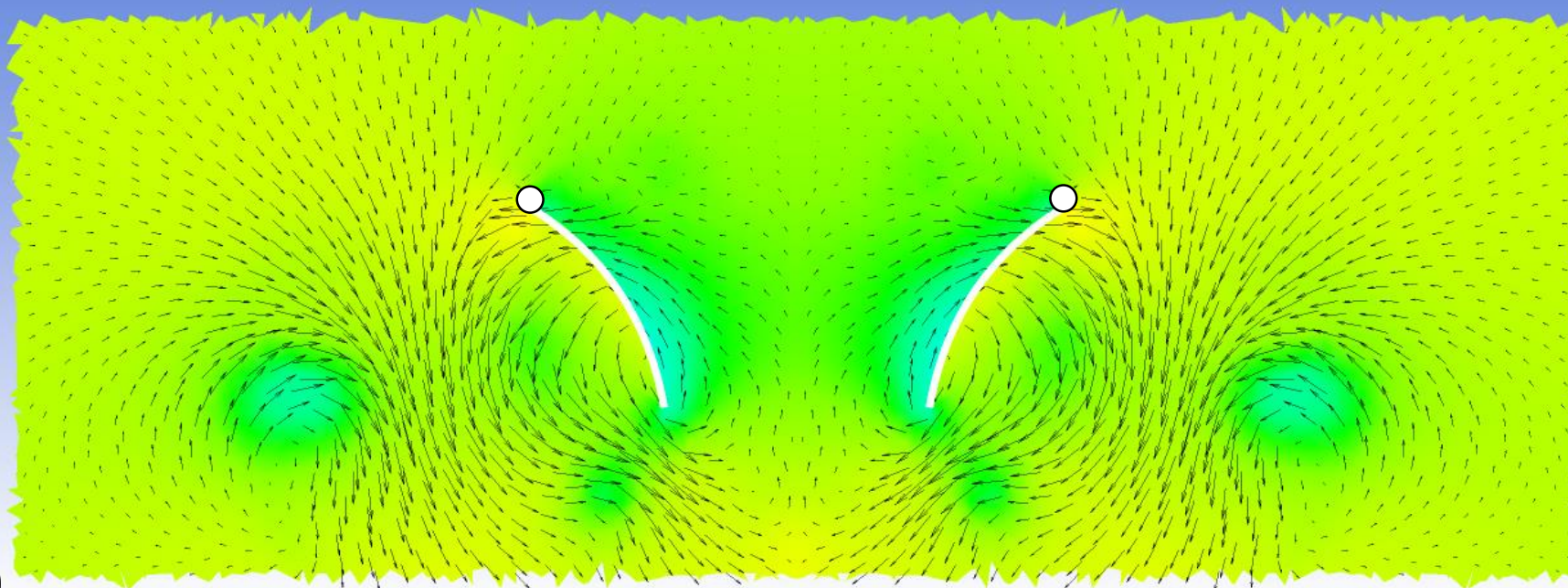
ANSYS
R16.2
Academic



40mm



[Pa]

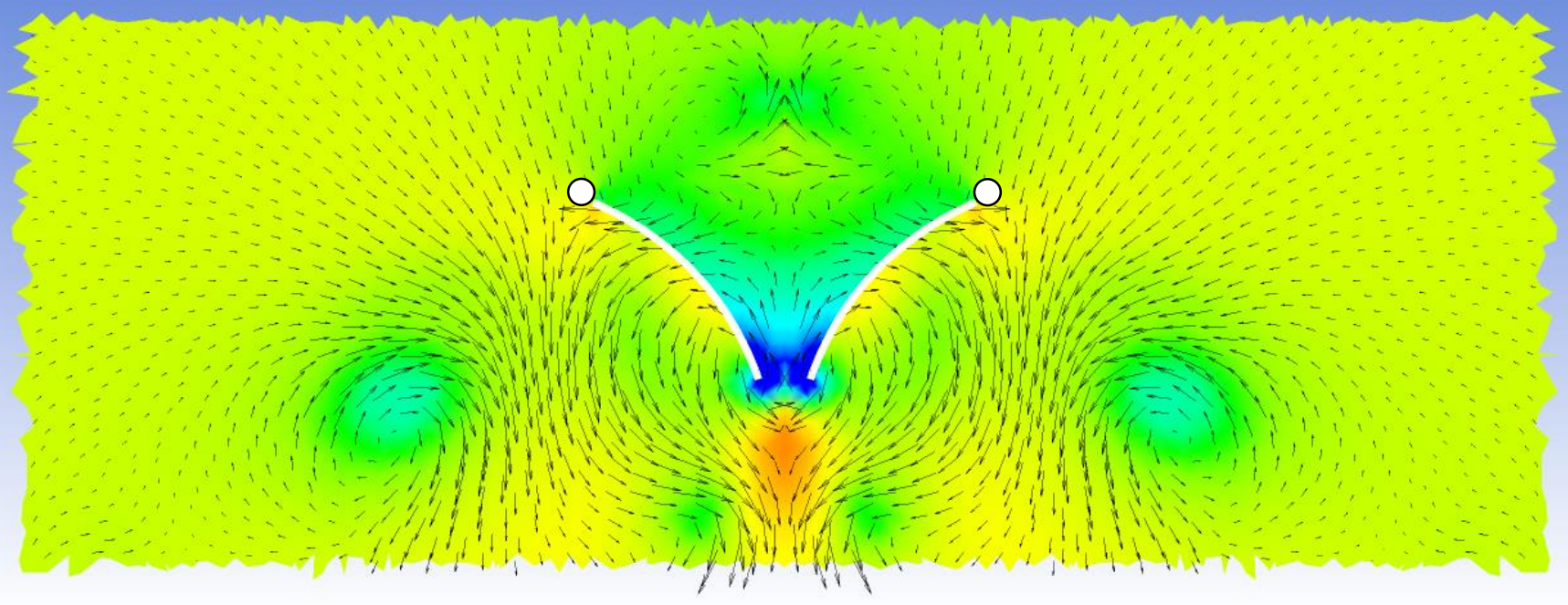
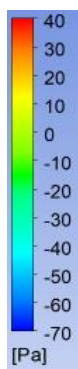


ANSYS
R16.2
Academic

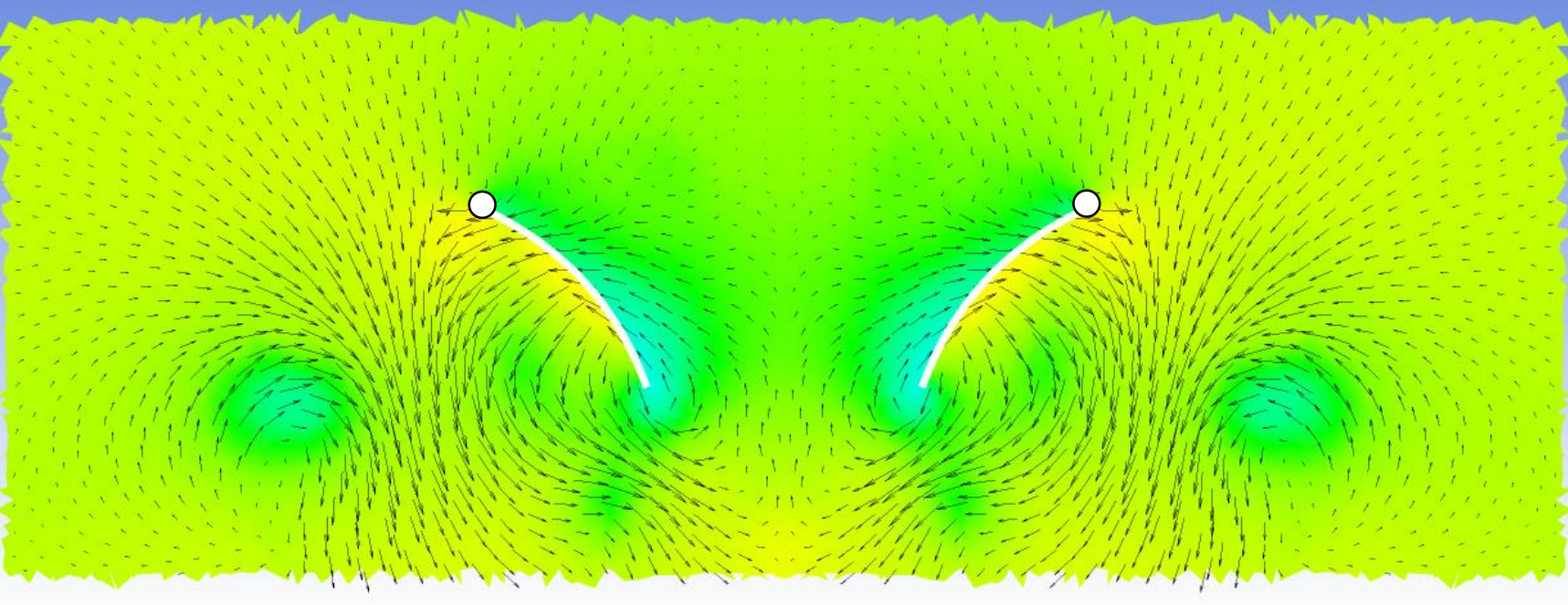
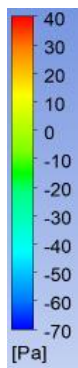


$t/T=0.30$

16mm

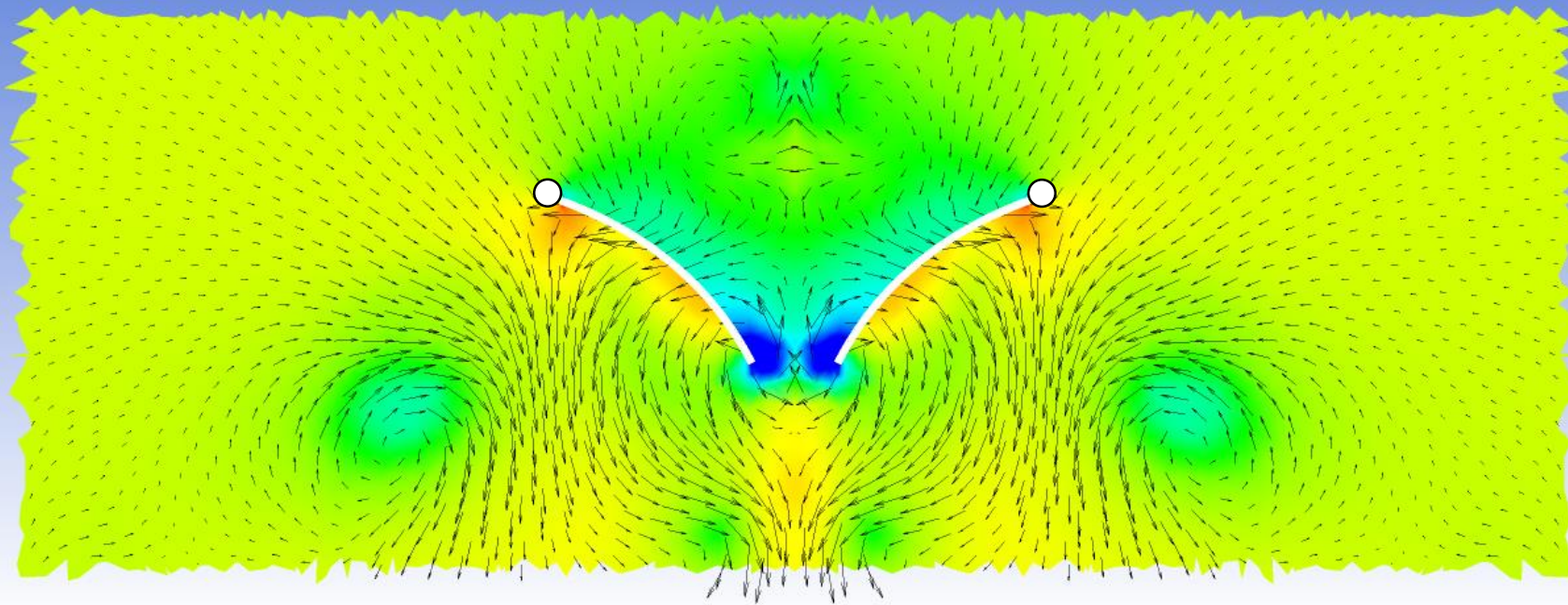
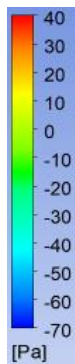


40mm



$t/T=0.31$

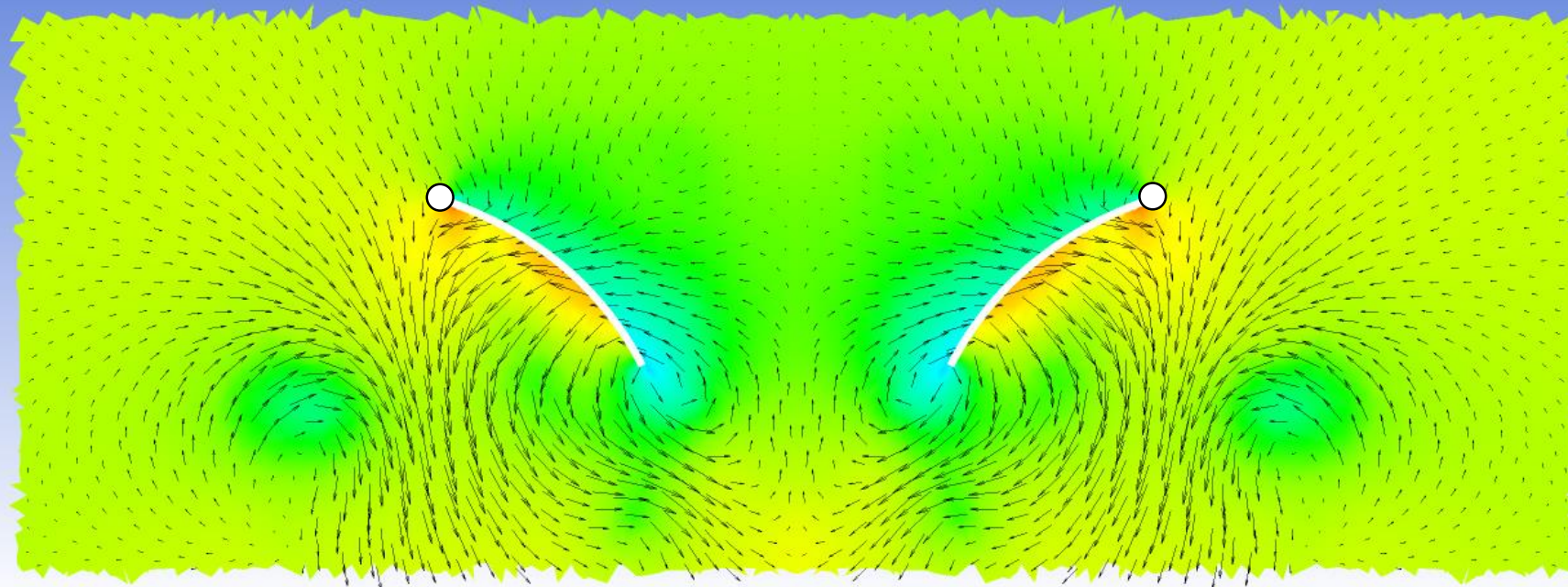
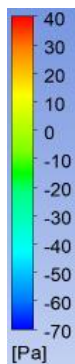
16mm



ANSYS
R16.2
Academic



40mm



ANSYS
R16.2
Academic



$t/T=0.32$