Supplemental digital content

Table A. The blood damage indices corresponding to different operating conditions

(a) The blood damage indices corresponding to different motion profiles of pusher plate

	IH(%)	*Dpl(Pa·s)*	*TotalTSP(%)*
Sine	1.162e-4	1.588	17.82
Polynomial	1.687e-4	1.843	7.057
Cosine	1.813e-4	1.891	4.327

(b) The blood damage indices corresponding to different stroke volumes

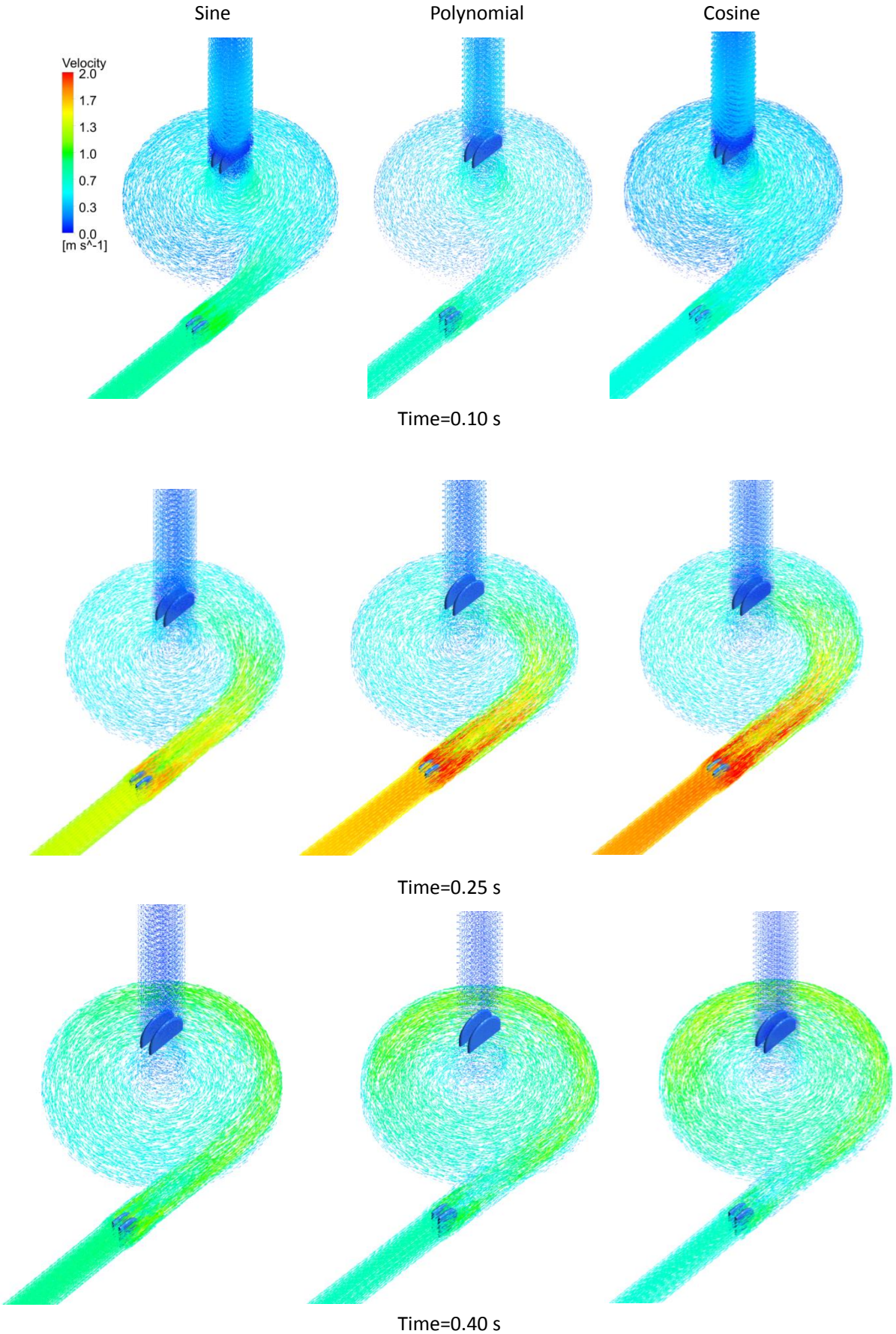
	IH(%)	*Dpl(Pa·s)*	*TotalTSP(%)*
56ml	1.162e-4	1.588	17.82
42ml	3.976e-5	0.9804	57.33
28ml	1.387e-5	0.5803	86.19

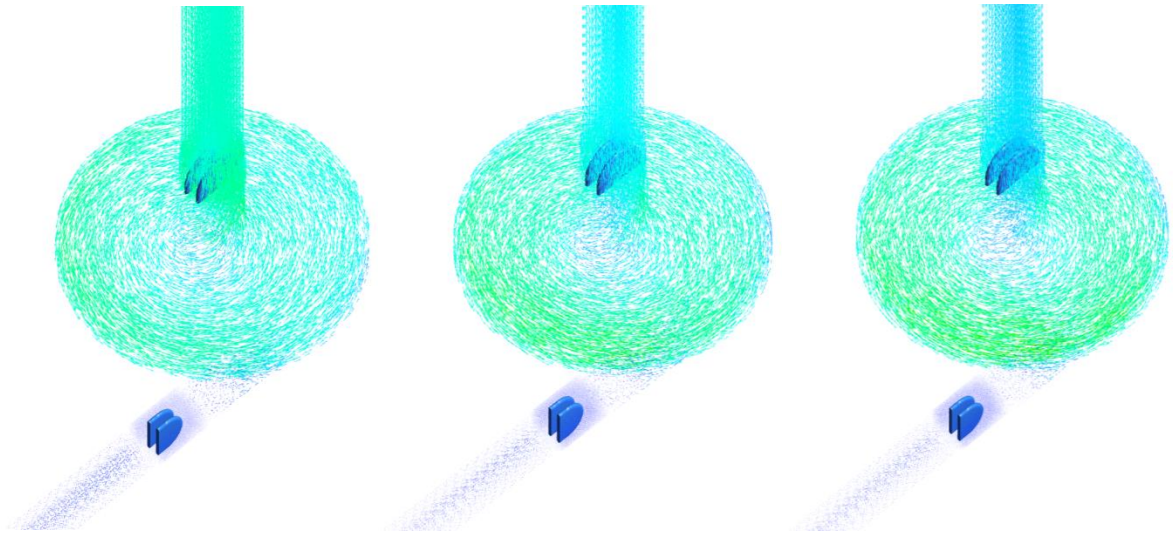
(c) The blood damage indices corresponding to different pulsatile rates

	IH(%)	*Dpl(Pa·s)*	*TotalTSP(%)*
75bpm	1.162e-4	1.588	17.82
100bpm	2.612e-4	2.0139	1.528
150bpm	8.874e-4	2.8006	6.435e-3

(d) The blood damage indices corresponding to different assist modes

	IH(%)	*Dpl(Pa·s)*	*TotalTSP(%)*
Co-pulsation	1.162e-4	1.588	17.82
Counter-pulsation	2.449e-4	1.976	0.2037


Sine
Polynomial
Cosine
Velocity
2.0
1.7
1.3
1.0
0.7
0.3
0.0
[m s^-1]
Time=0.10 s
Time=0.25 s
Time=0.40 s



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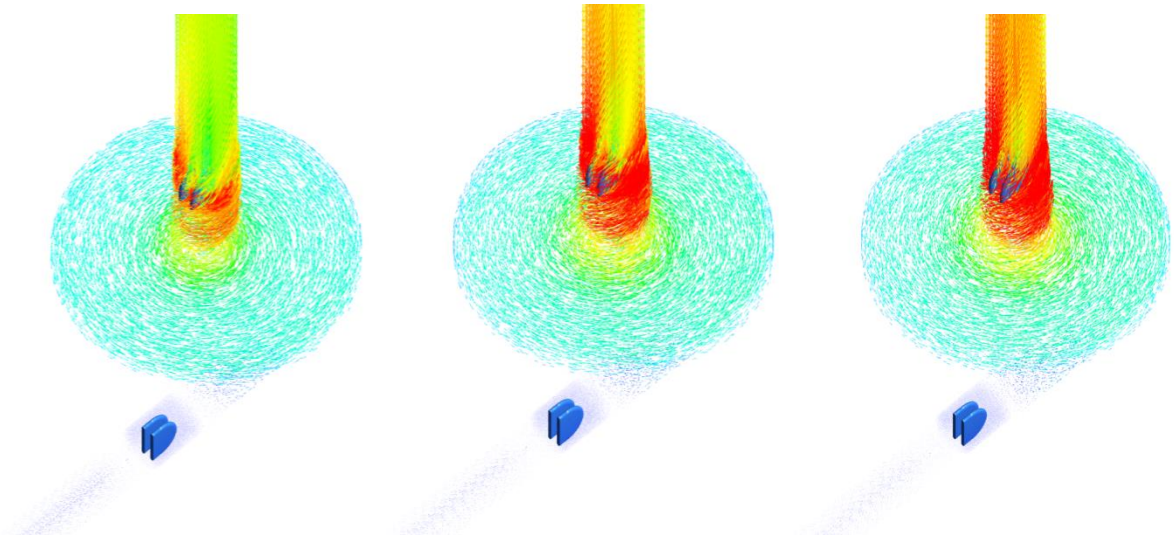

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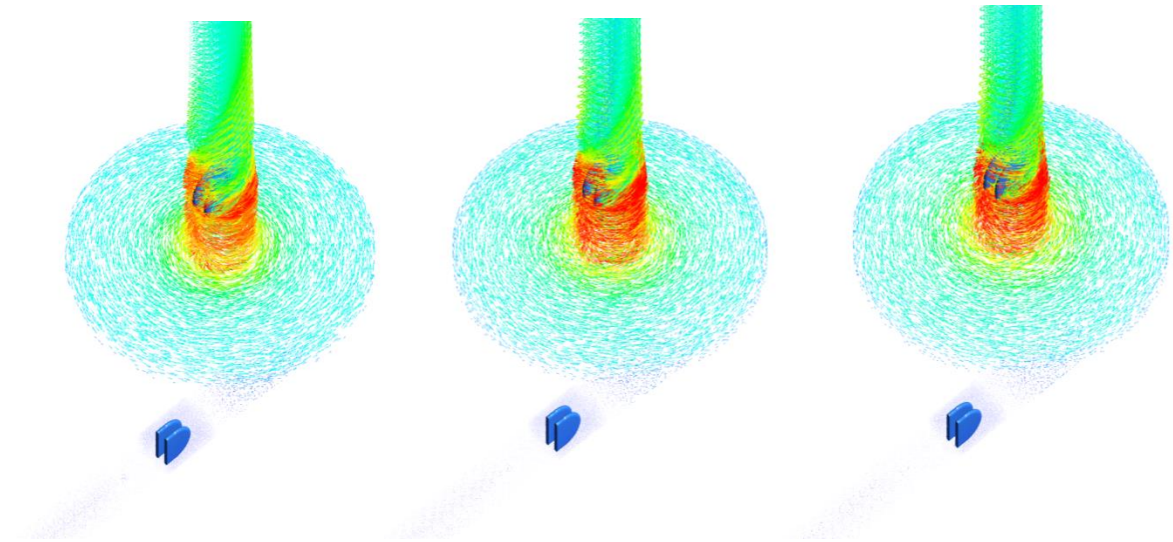

Time=0.75 s

Figure A. The velocity vector plots of the pulsatile VAD corresponding to three motion profiles (sine, polynomial and cosine). Larger size of the vector symbol represents higher velocity. The diastolic phase is 0.0~0.5s, and the systolic phase is 0.5~0.8s.