Appendix E

Supplementary data for Chapter 2 - Steady cavity flow

E.1 Data for the AR = 2 cavity

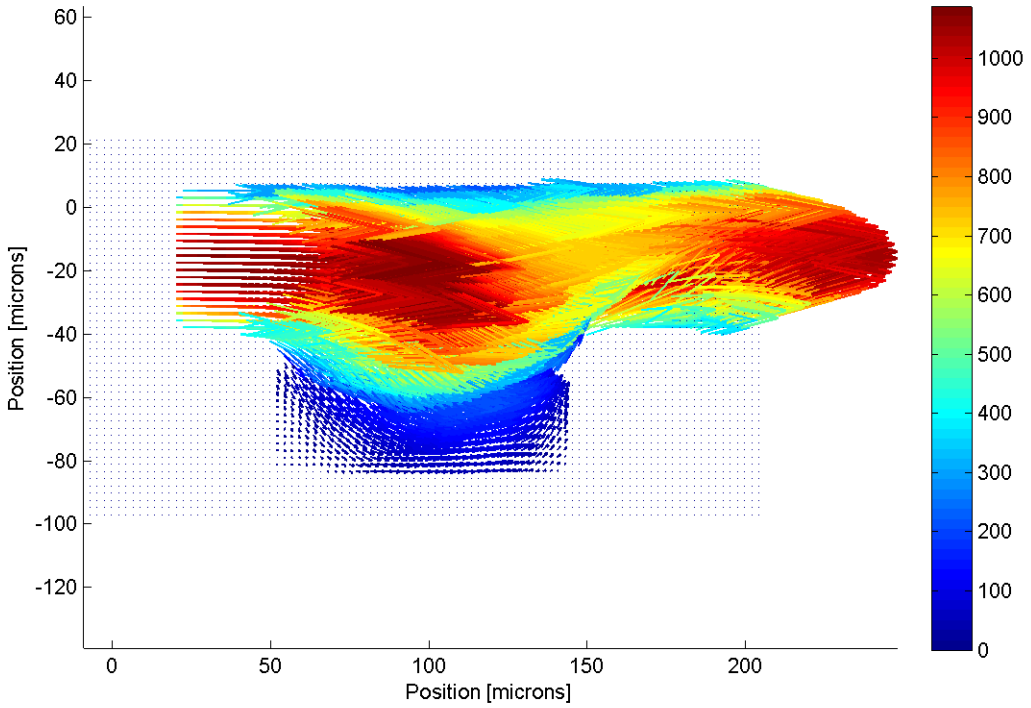

Figure E.1: Velocity field in the AR 2 cavity at Re 30.

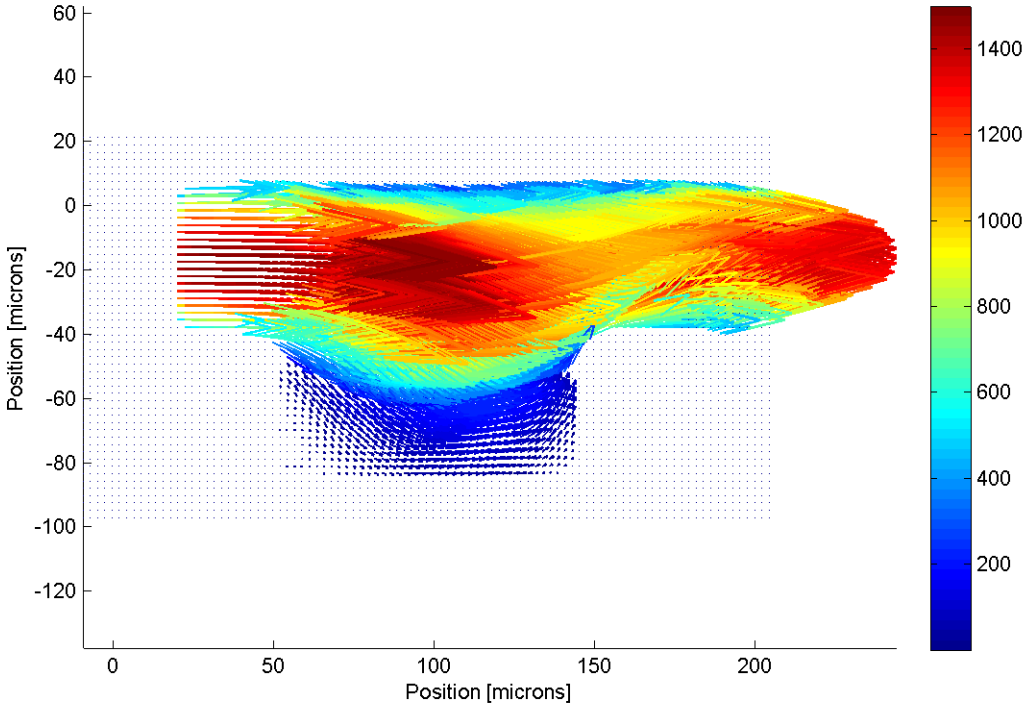

Figure E.2: Velocity field in the AR 2 cavity at Re 40.

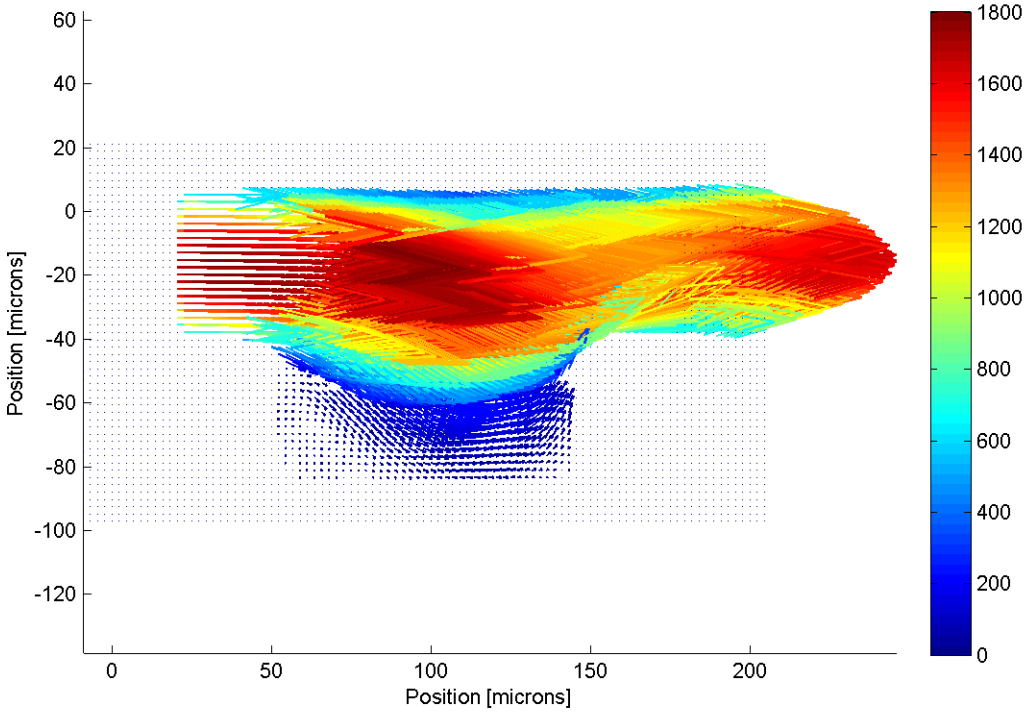

Figure E.3: Velocity field in the AR 2 cavity at Re 50.

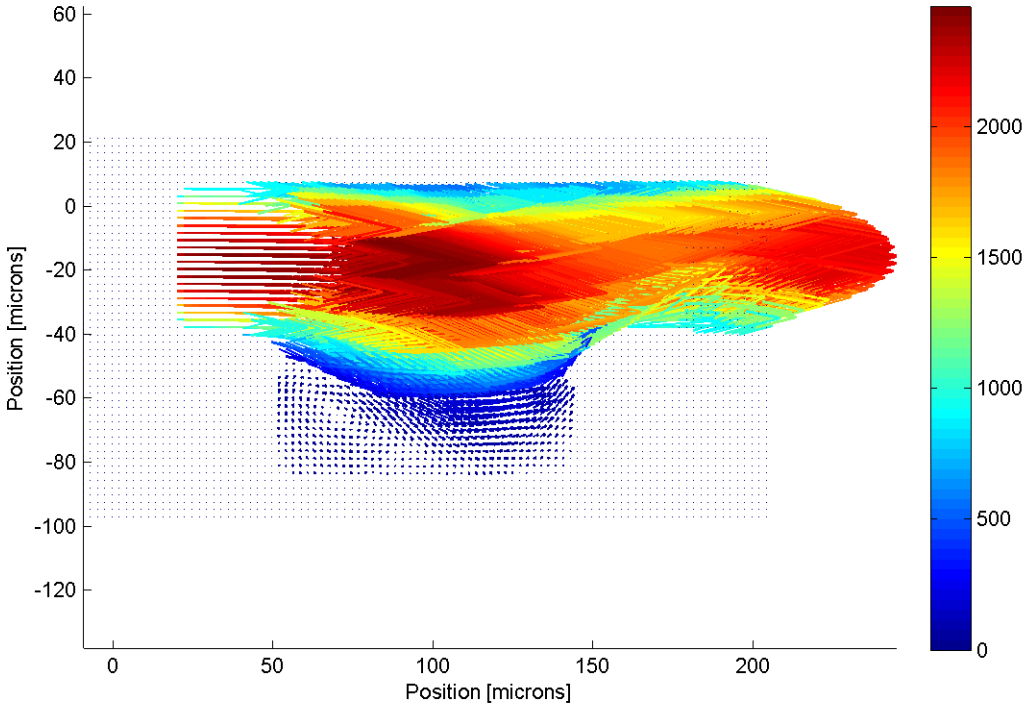

Figure E.4: Velocity field in the AR 2 cavity at Re 75.

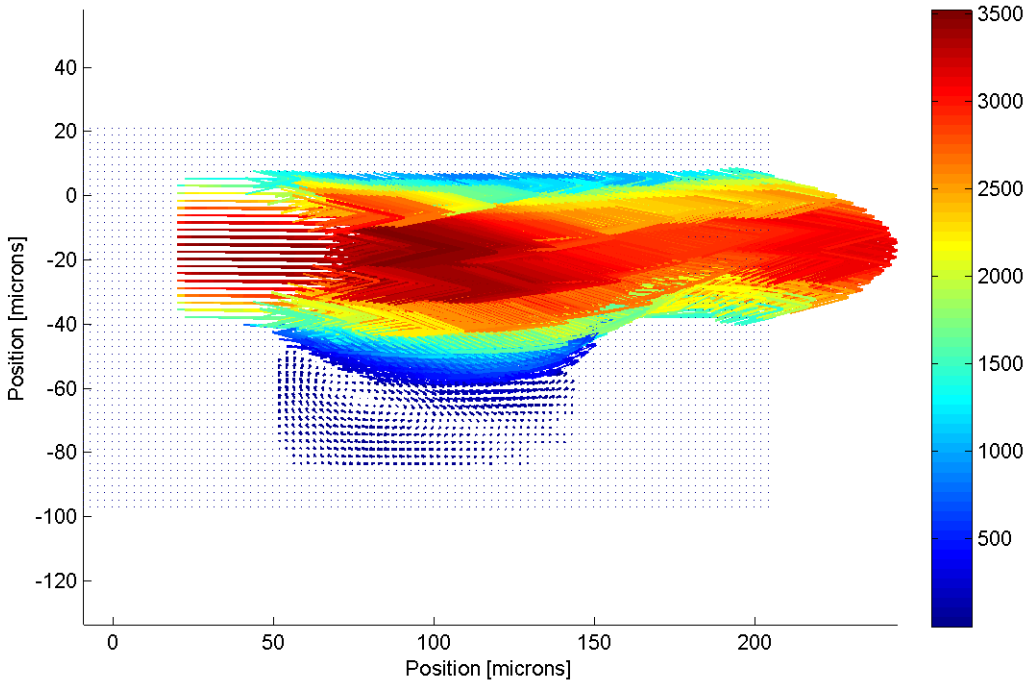

Figure E.5: Velocity field in the AR 2 cavity at Re 100.

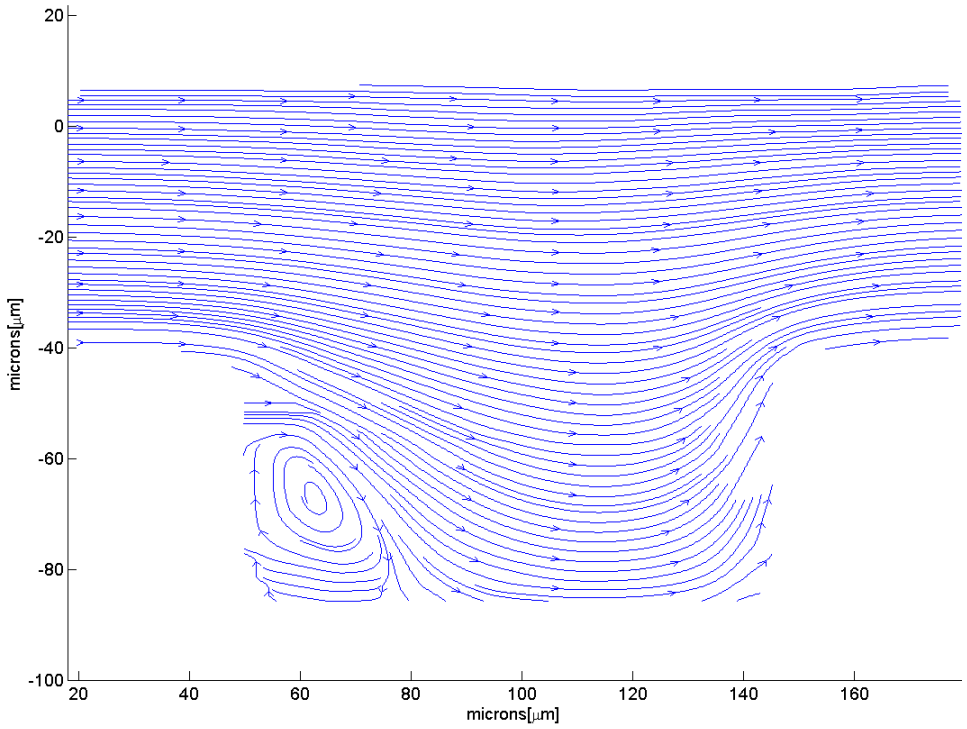

Figure E.6: A streamline plot of steady flow in the AR = 2 cavity at Re 50.

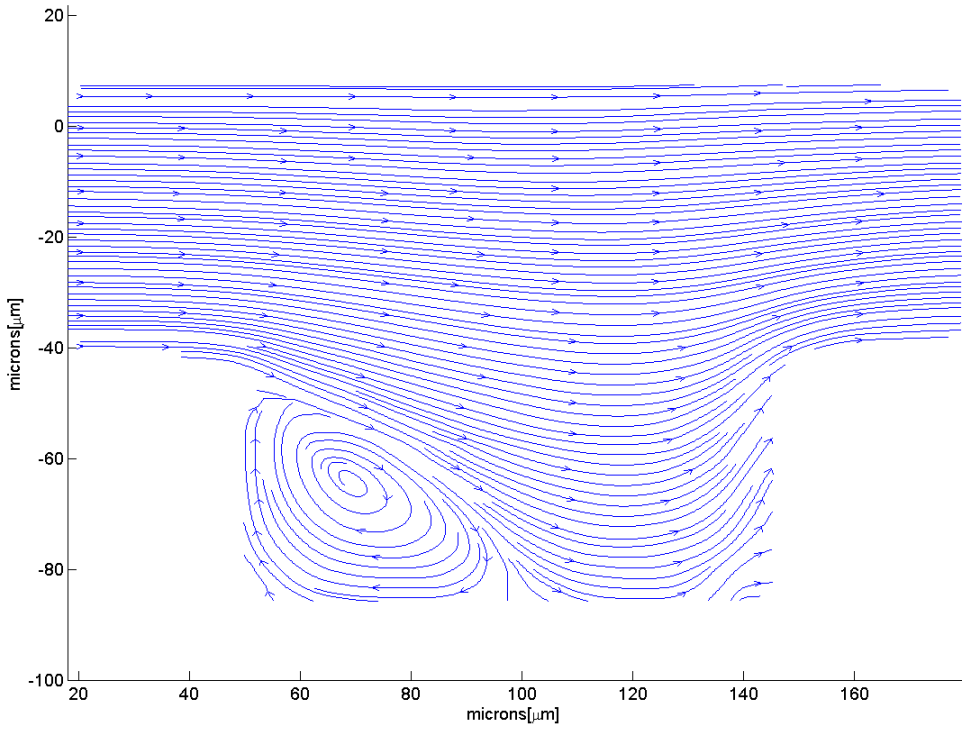

Figure E.7: A streamline plot of steady flow in the AR = 2 cavity at Re 75.

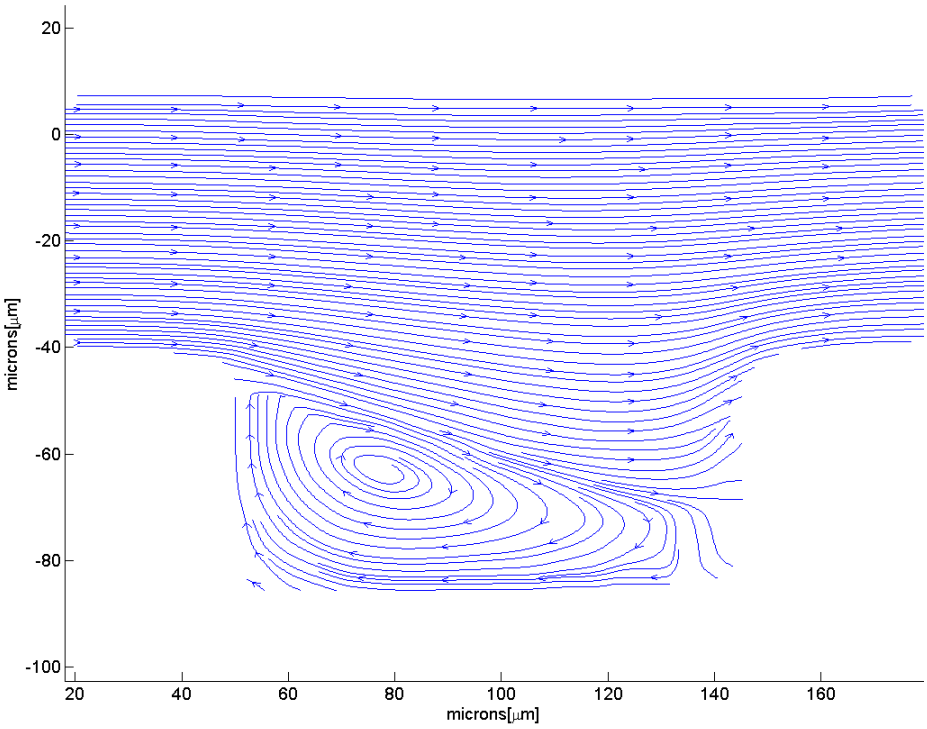

Figure E.8: A streamline plot of steady flow in the AR = 2 cavity at Re 100.

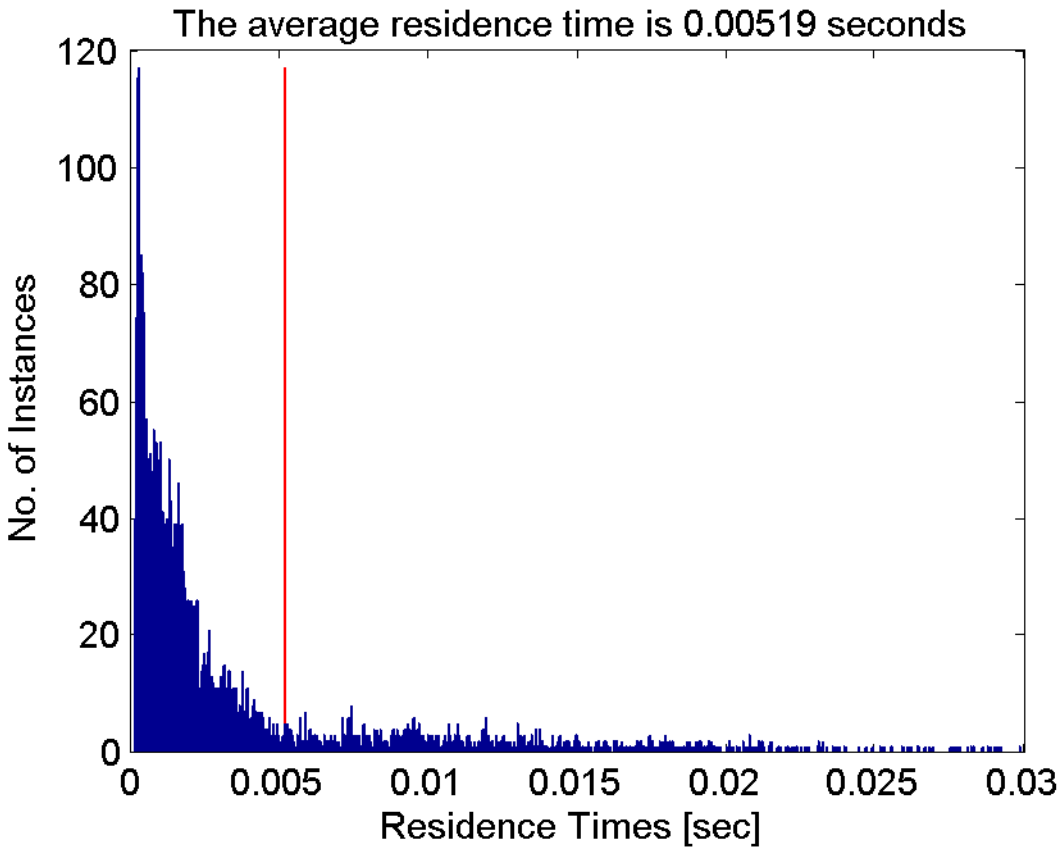

Figure E.9: The residence time distribution for the AR = 2 cavity at Re 40. The average residence time is 0.0052 secs.

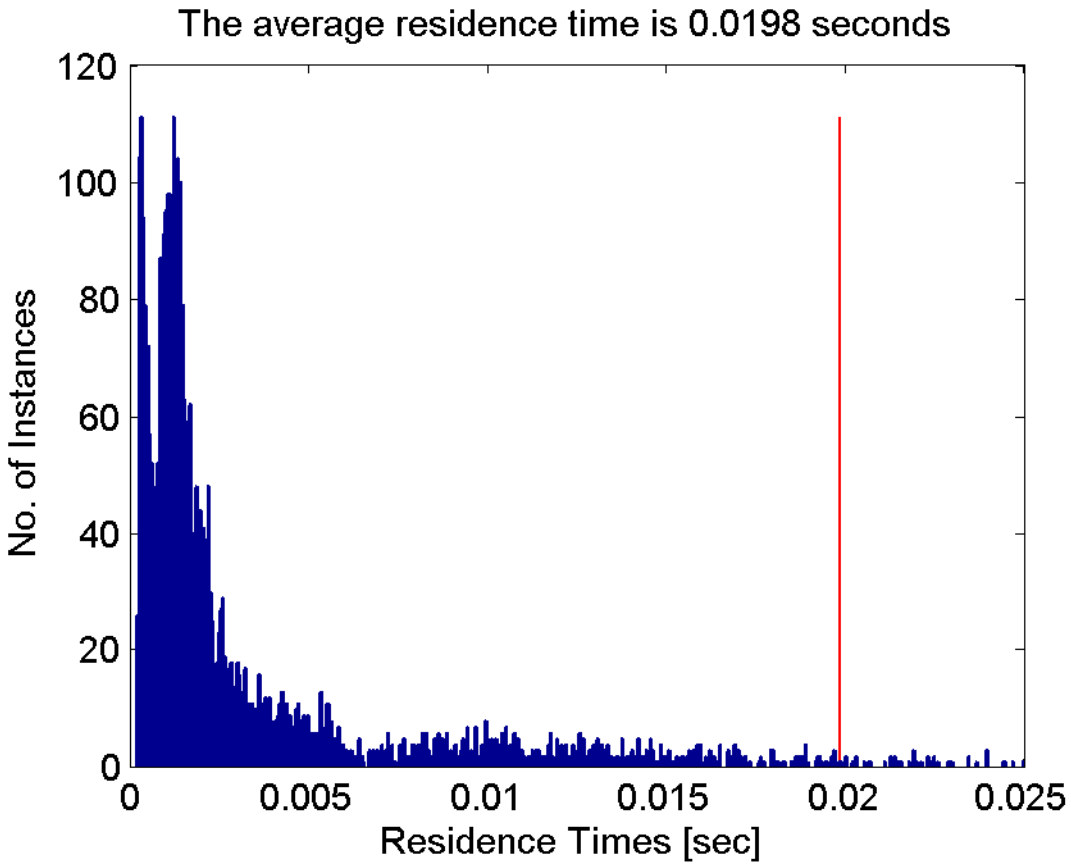

Figure E.10: The residence time distribution for the AR = 2 cavity at Re 50. The average residence time is 0.0198 secs.

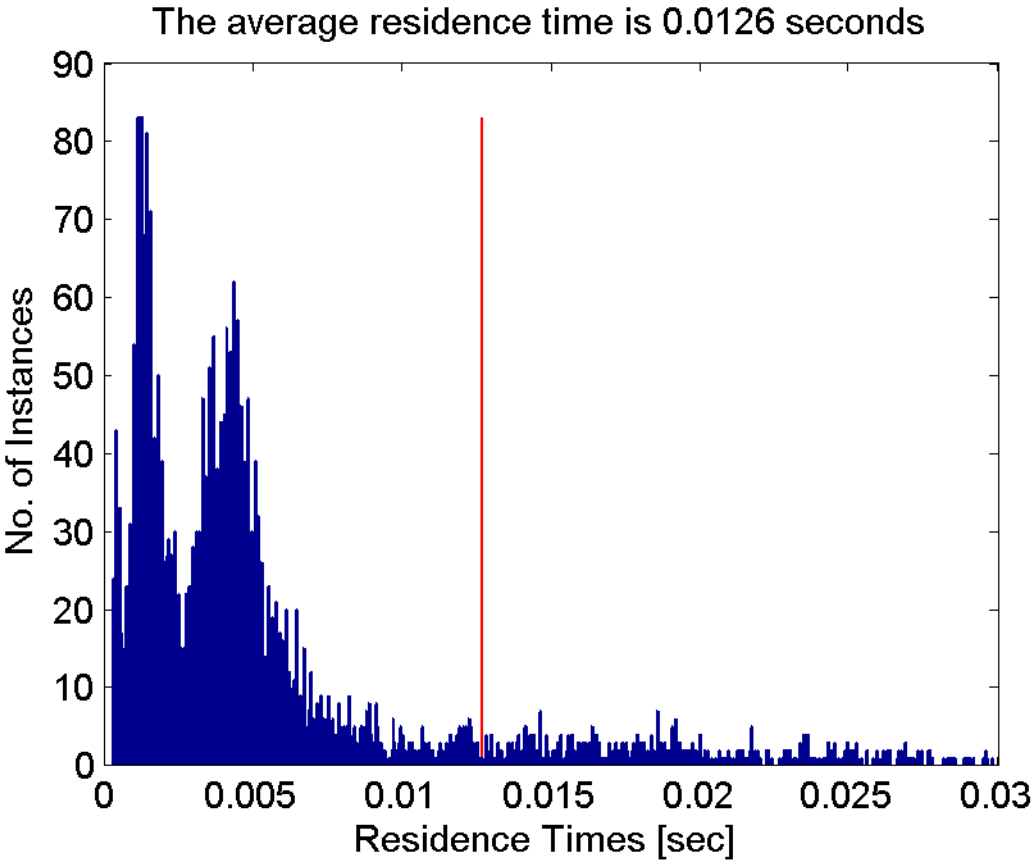

Figure E.11: The residence time distribution for the AR = 2 cavity at Re 75. The average residence time is 0.0126 secs.

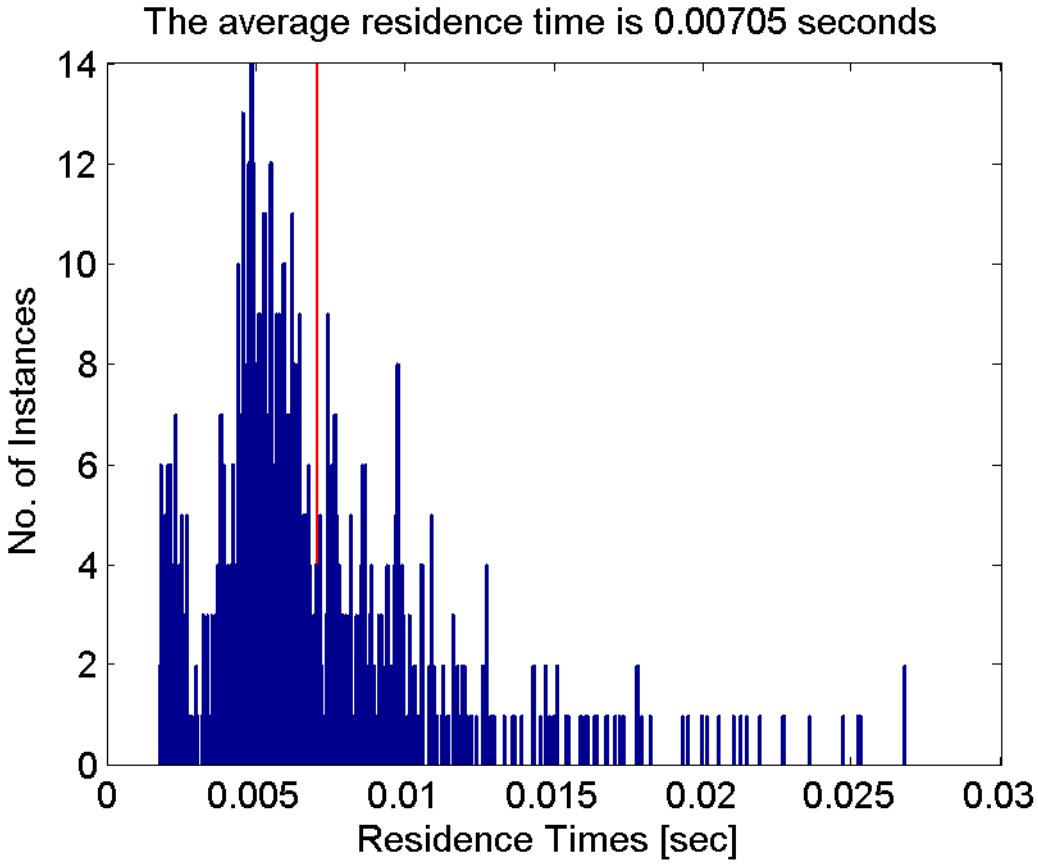

Figure E.12: The residence time distribution for the AR = 2 cavity at Re 100. The average residence time is 0.00705 secs.

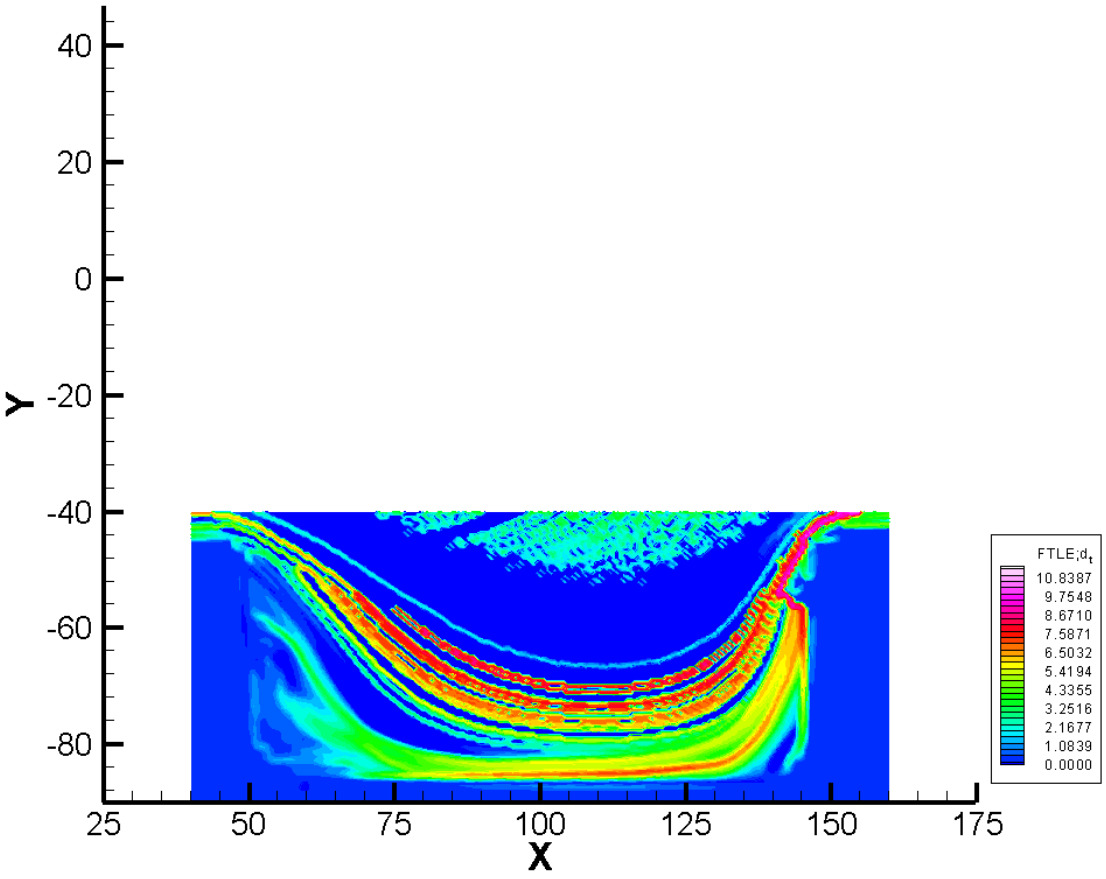

Figure E.13: The backward time LCS for the AR = 2 cavity at Re 40.

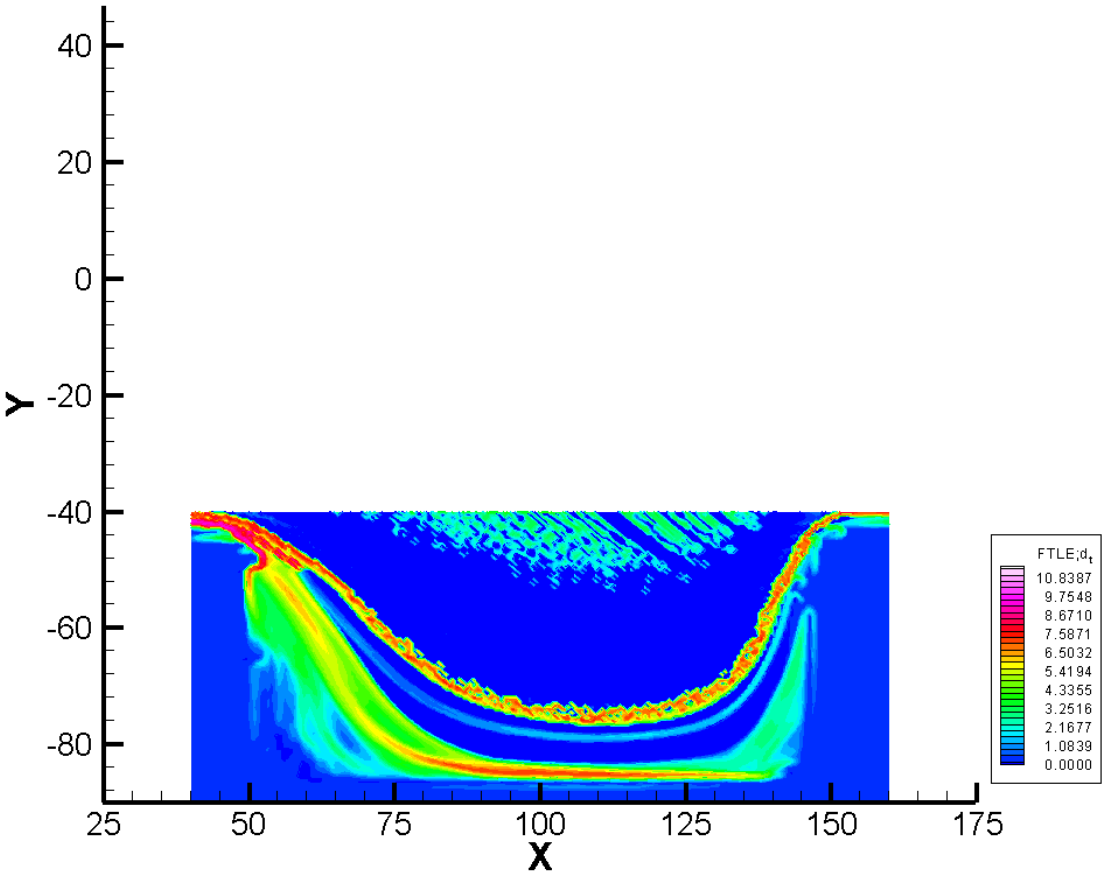

Figure E.14: The forward time LCS for the AR = 2 cavity at Re 40.

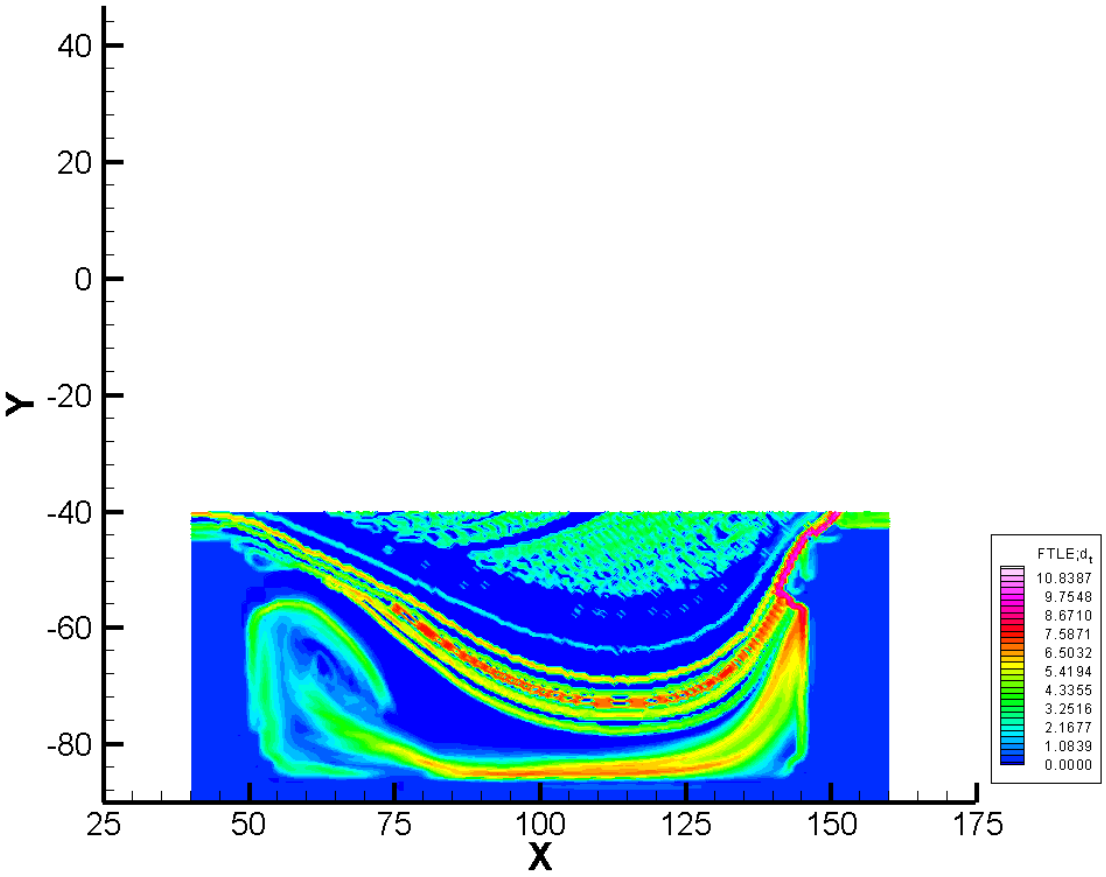

Figure E.15: The backward time LCS for the AR = 2 cavity at Re 50.

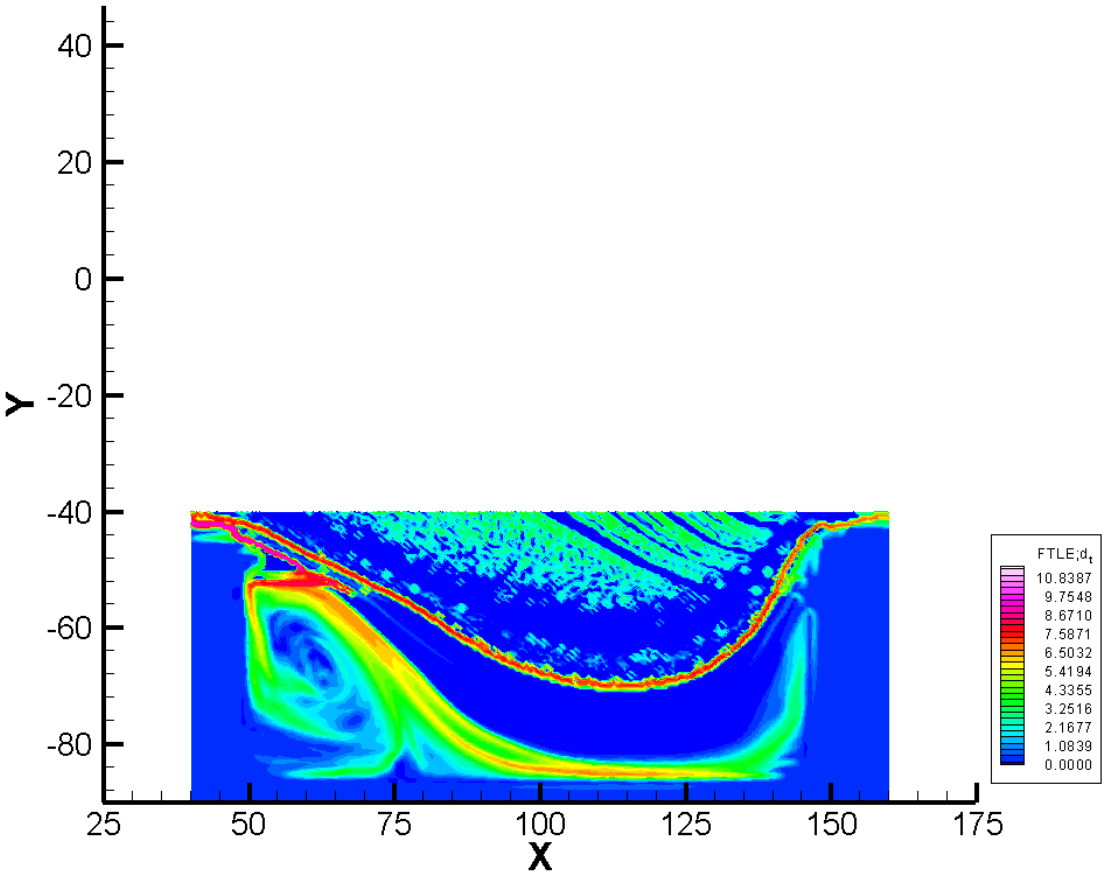

Figure E.16: The forward time LCS for the AR = 2 cavity at Re 50.

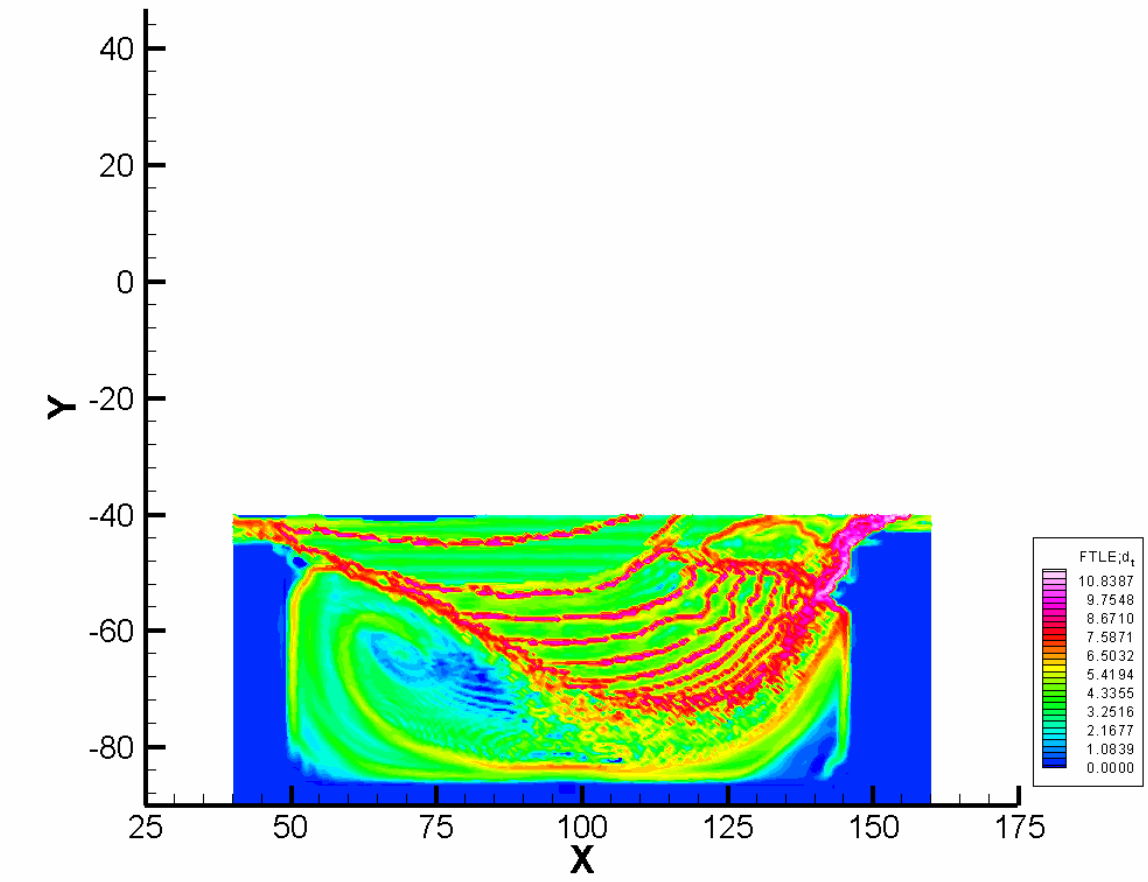

Figure E.17: The backward time LCS for the AR = 2 cavity at Re 75.

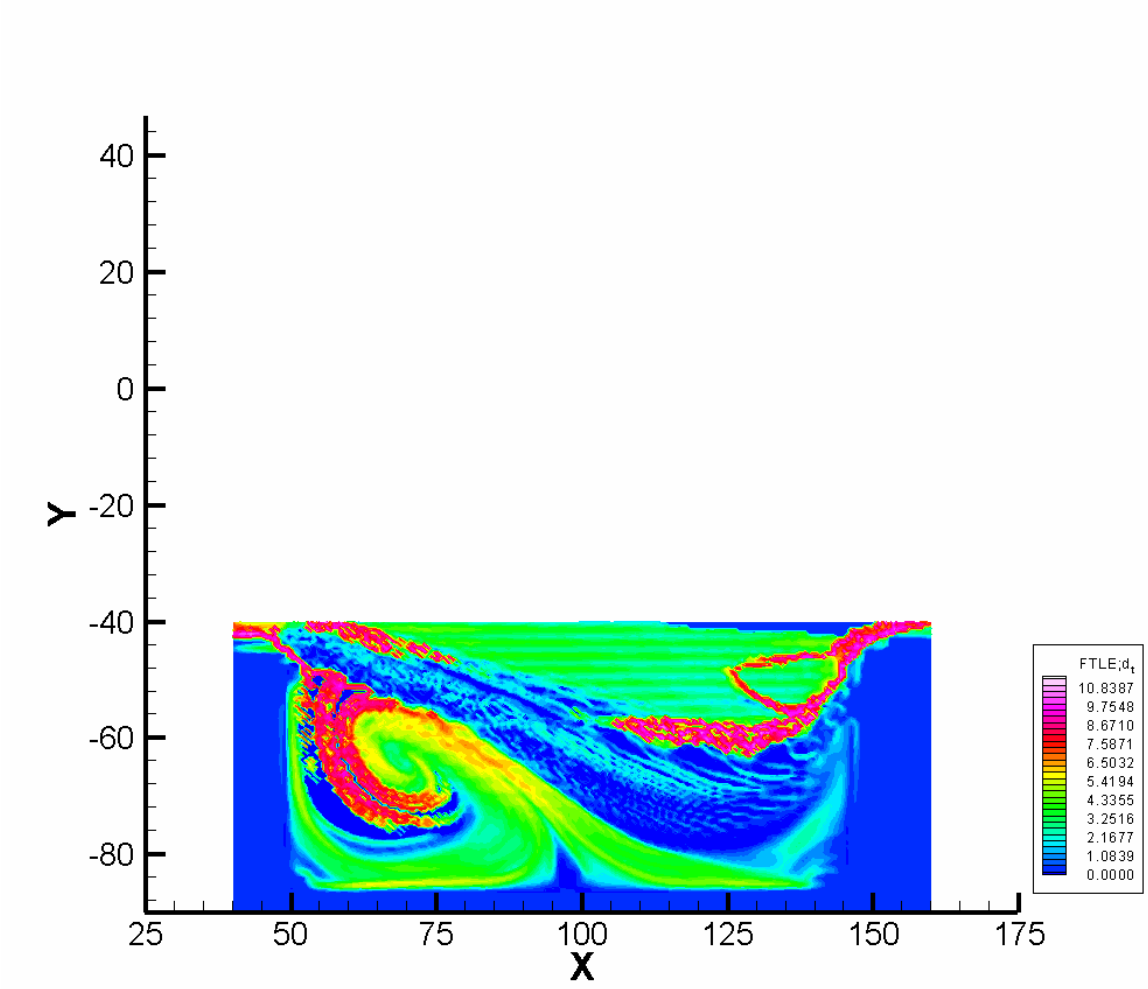

Figure E.18: The forward time LCS for the AR = 2 cavity at Re 75.

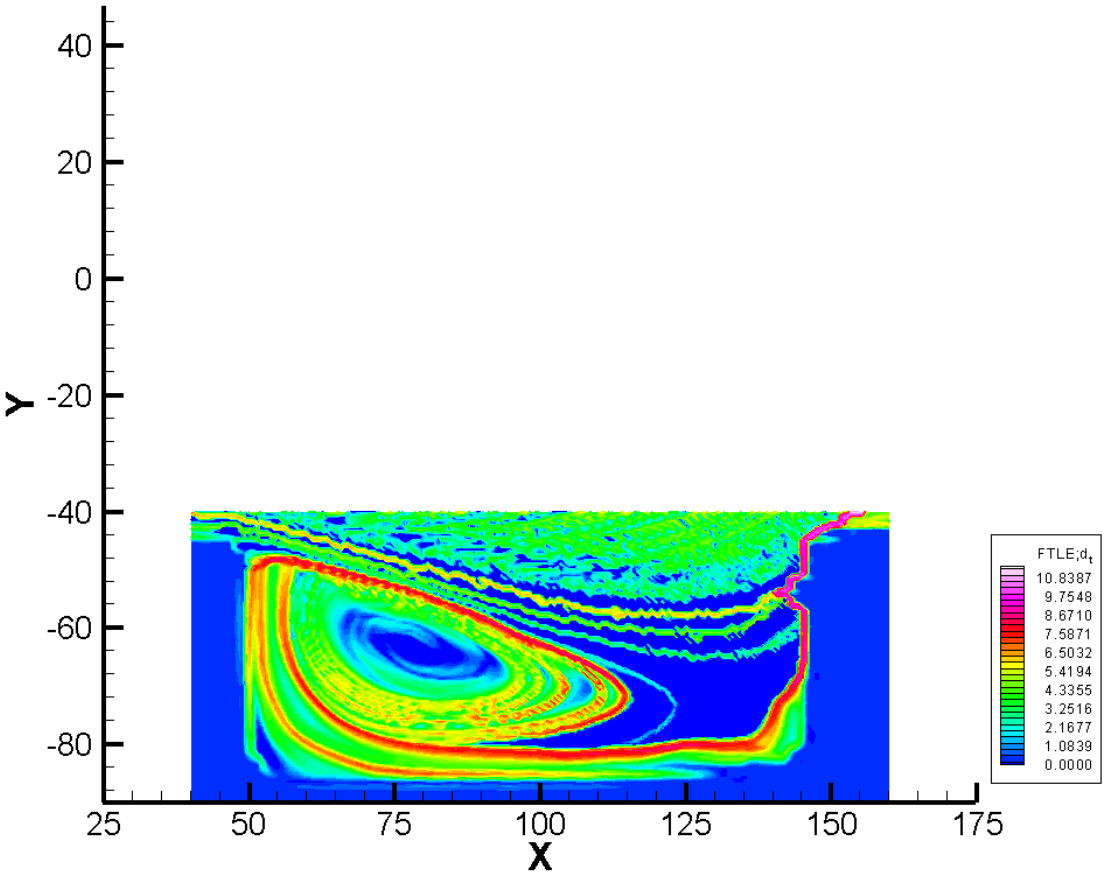

Figure E.19: The backward time LCS for the AR = 2 cavity at Re 100.

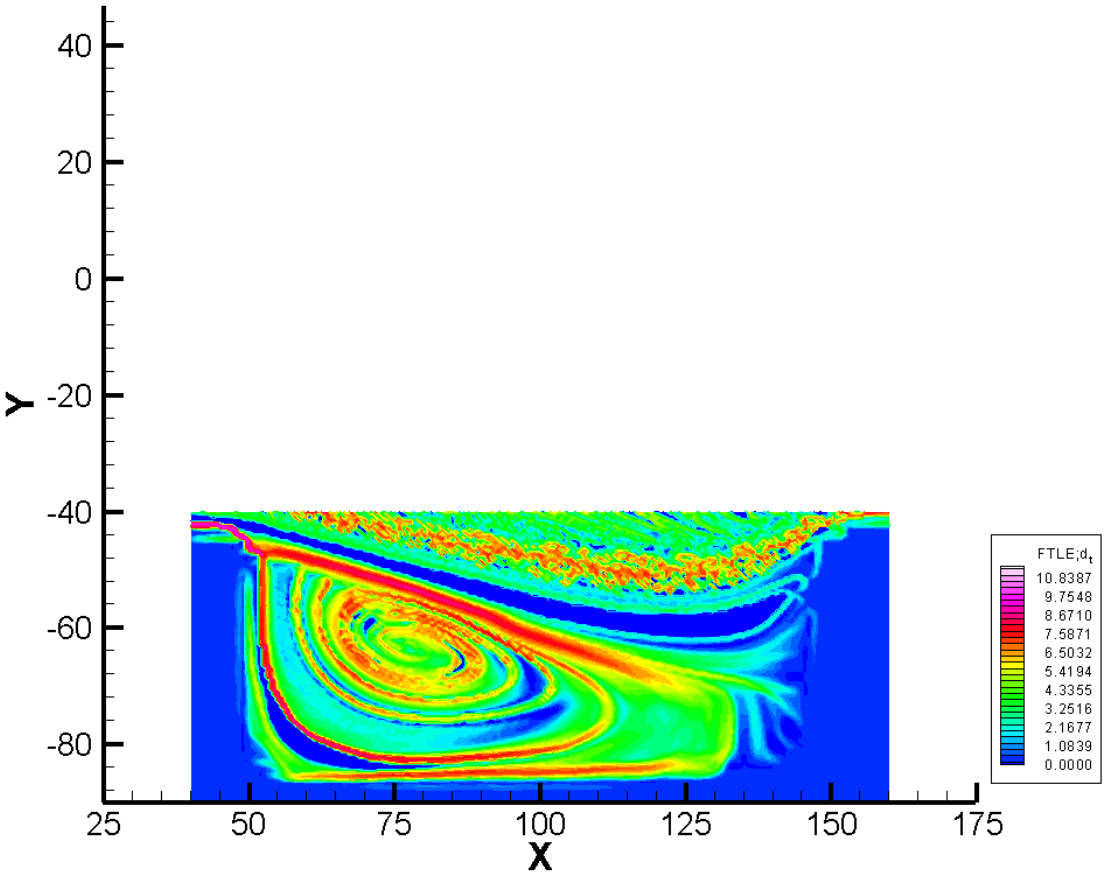

Figure E.20: The forward time LCS for the AR = 2 cavity at Re 100.

E.2 Data for the AR = 1 cavity

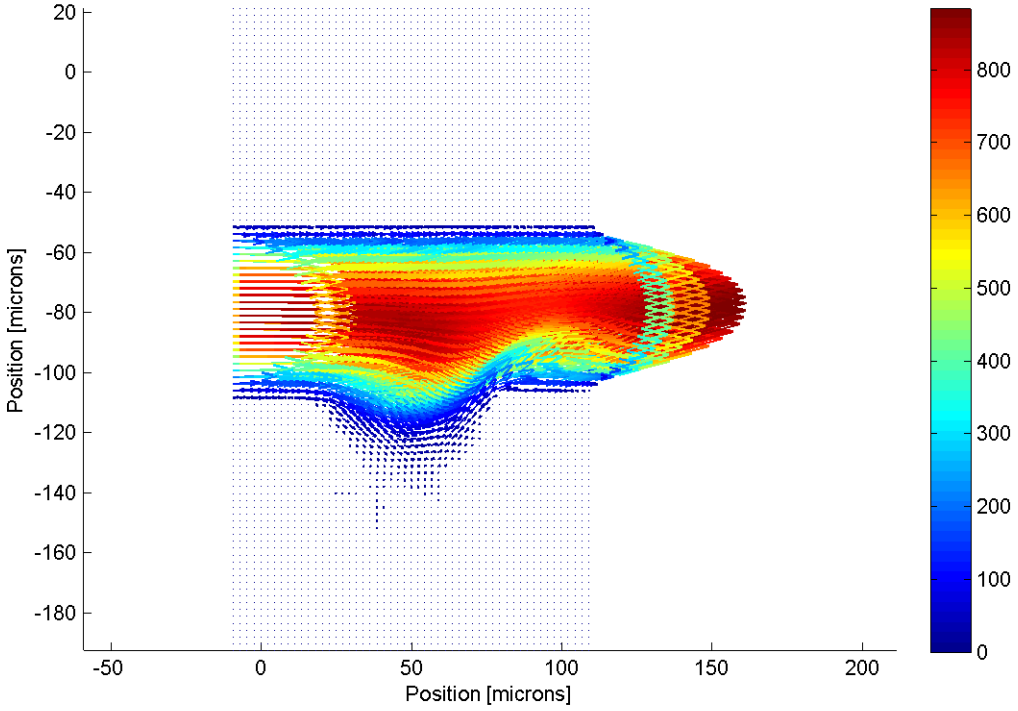

Figure E.21: Velocity field for the AR = 1 cavity at Re 24.

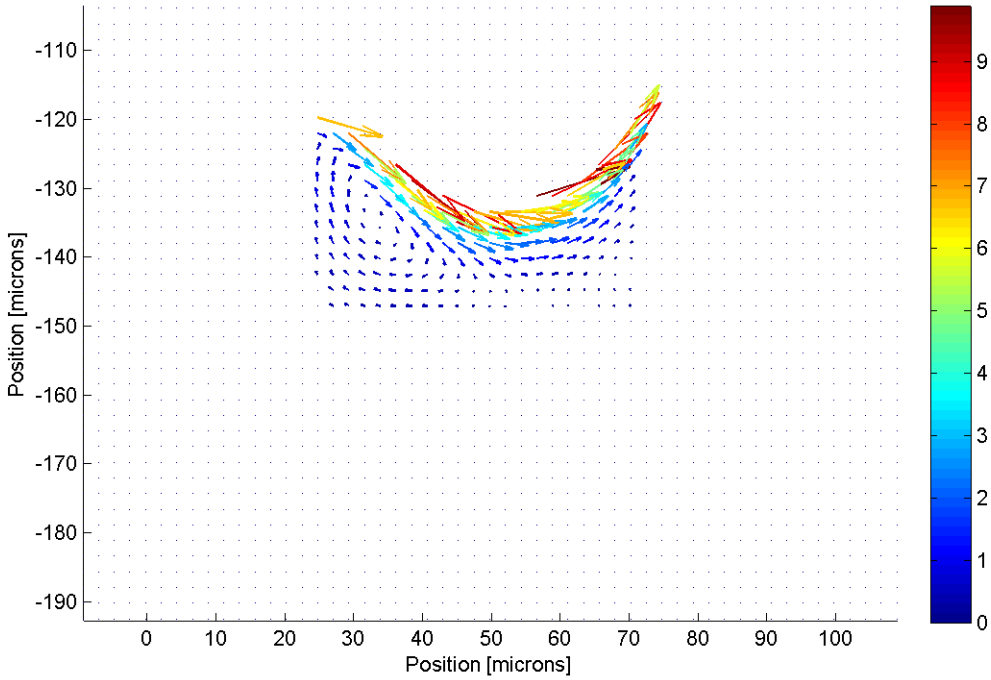

Figure E.22: Velocity field in the lower portion of the AR = 1 cavity at Re 24.

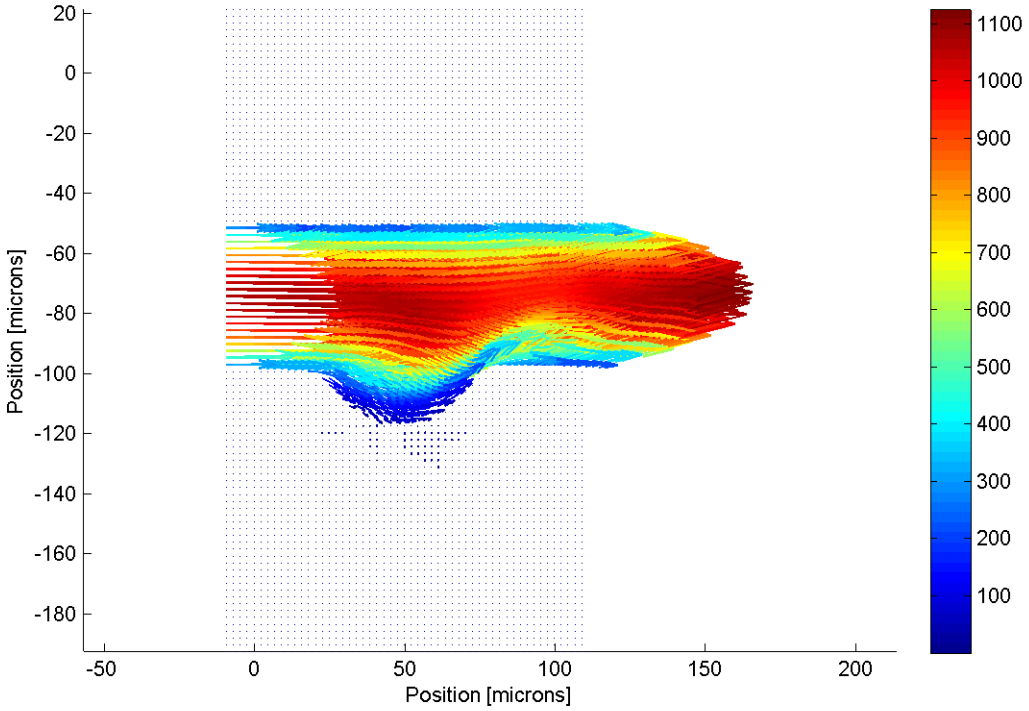

Figure E.23: Velocity field for the AR = 1 cavity at Re 30.

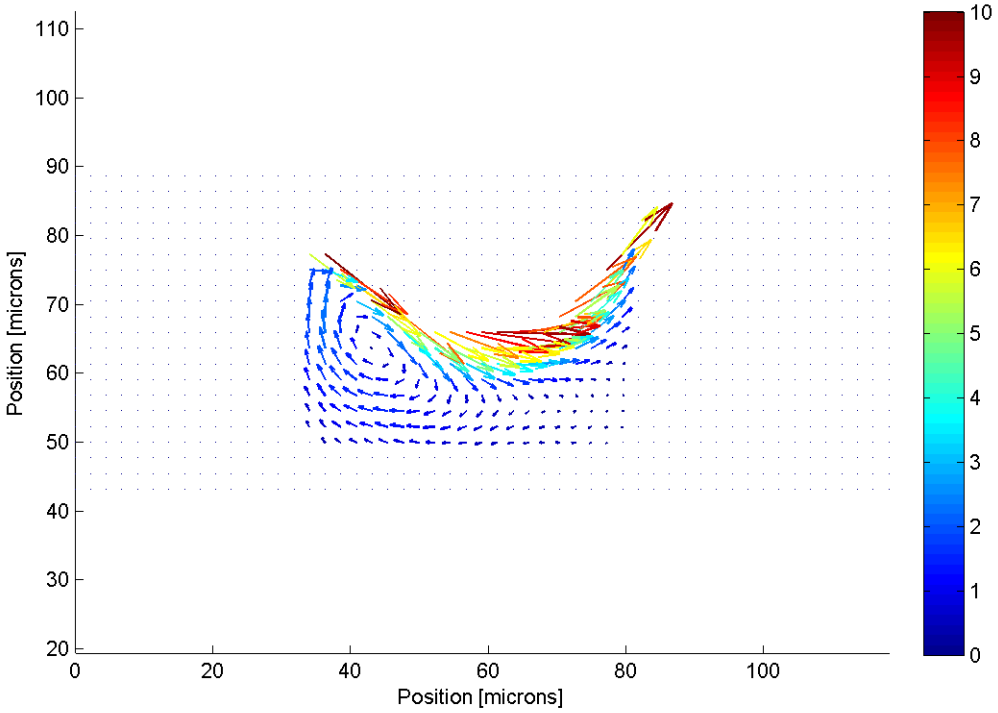

Figure E.24: Velocity field in the lower portion of the AR = 1 cavity at Re 30.

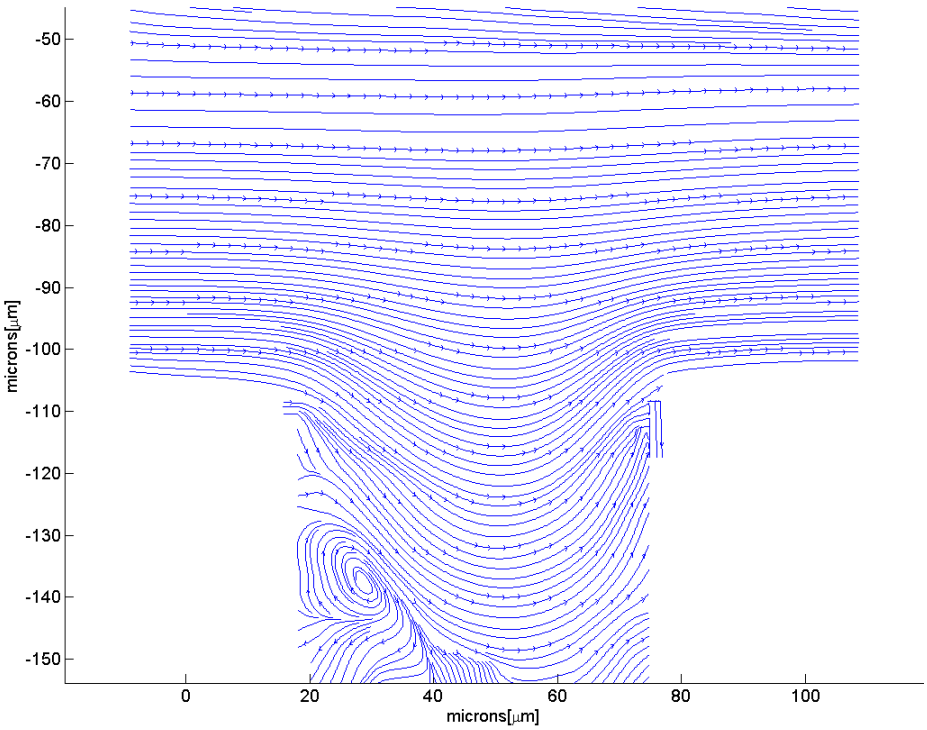

Figure E.25: A streamline image of steady flow in the AR = 1 cavity at Re 23.

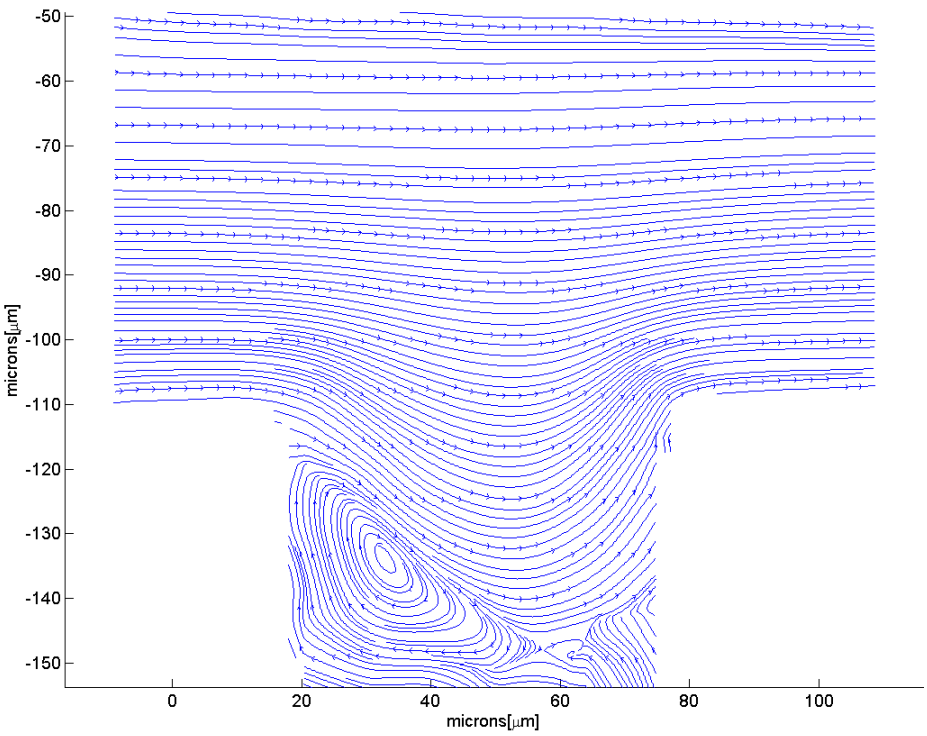

Figure E.26: A streamline image of steady flow in the AR = 1 cavity at Re 24.

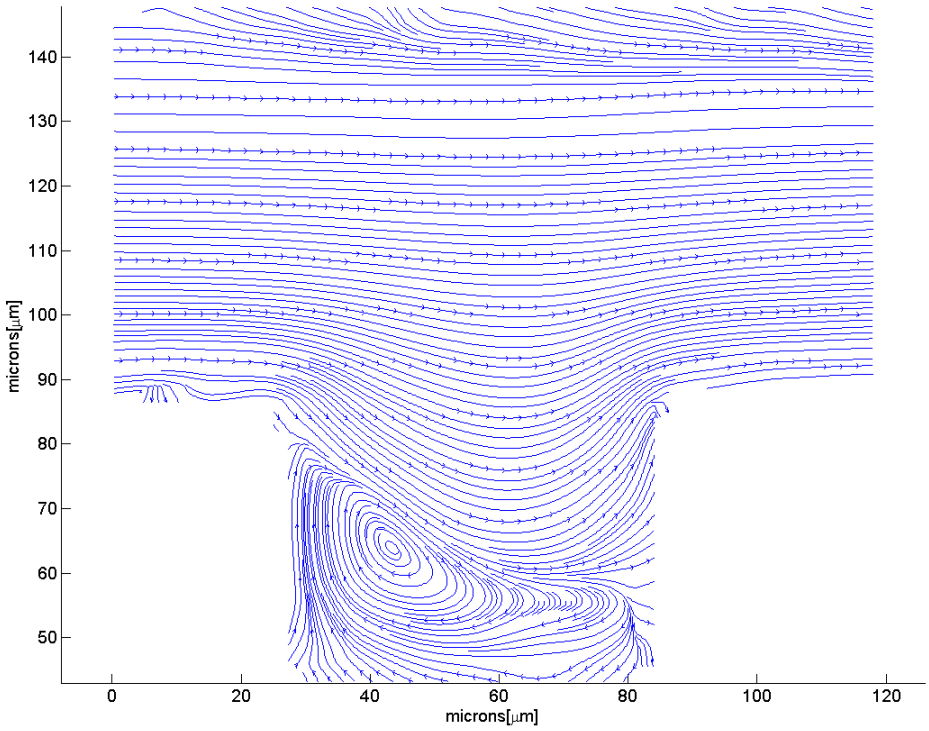

Figure E.27: A streamline image of steady flow in the AR = 1 cavity at Re 30.

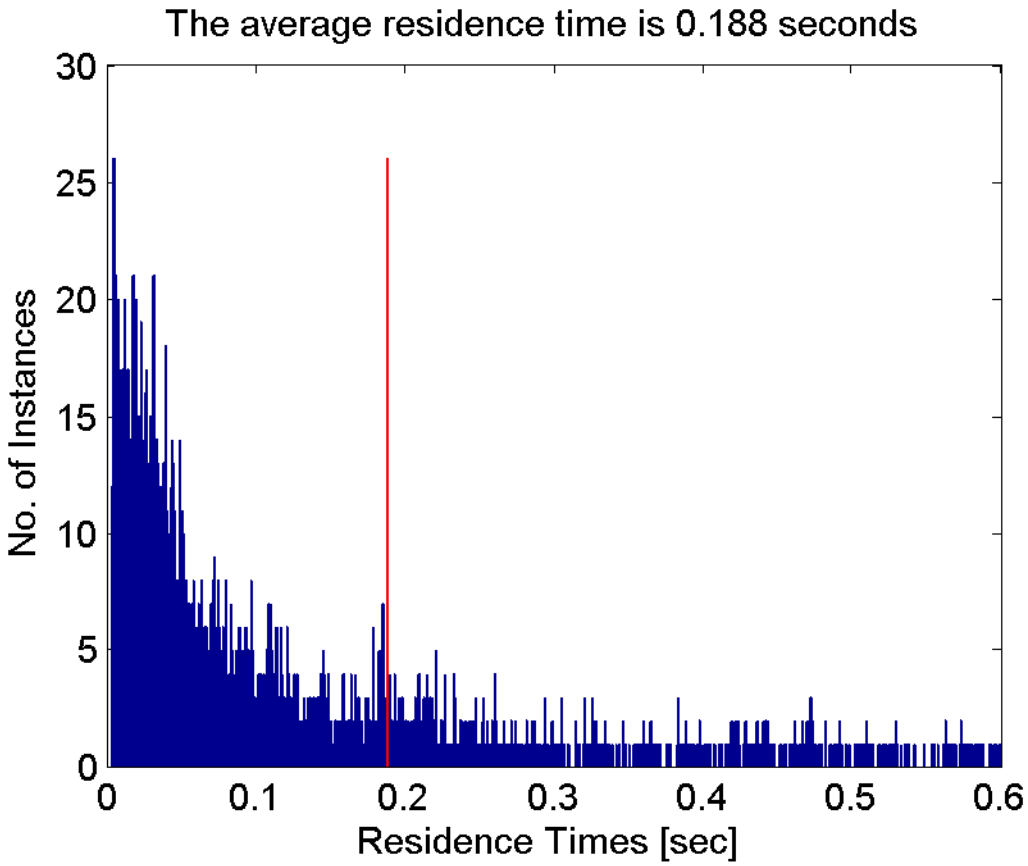

Figure E.28: The residence time distribution for the AR = 1 cavity at Re 23. The average residence time is 0.188 secs.

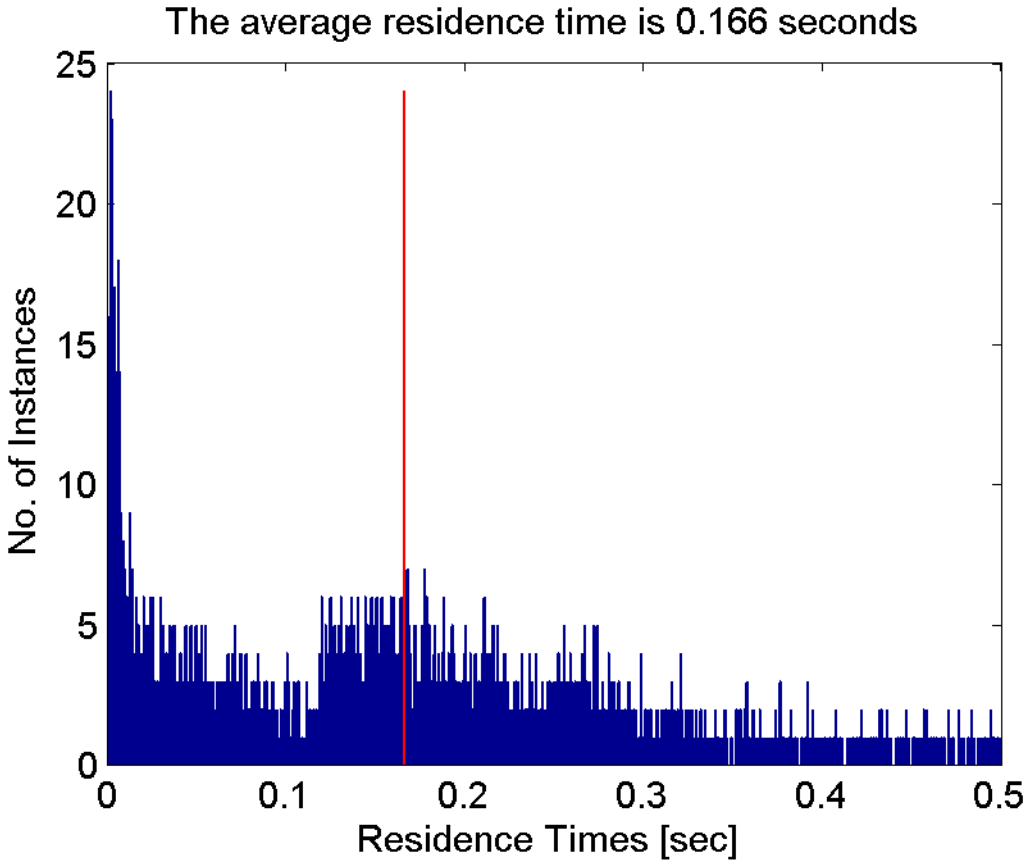

Figure E.29: The residence time distribution for the AR = 1 cavity at Re 24. The average residence time is 0.166 secs.

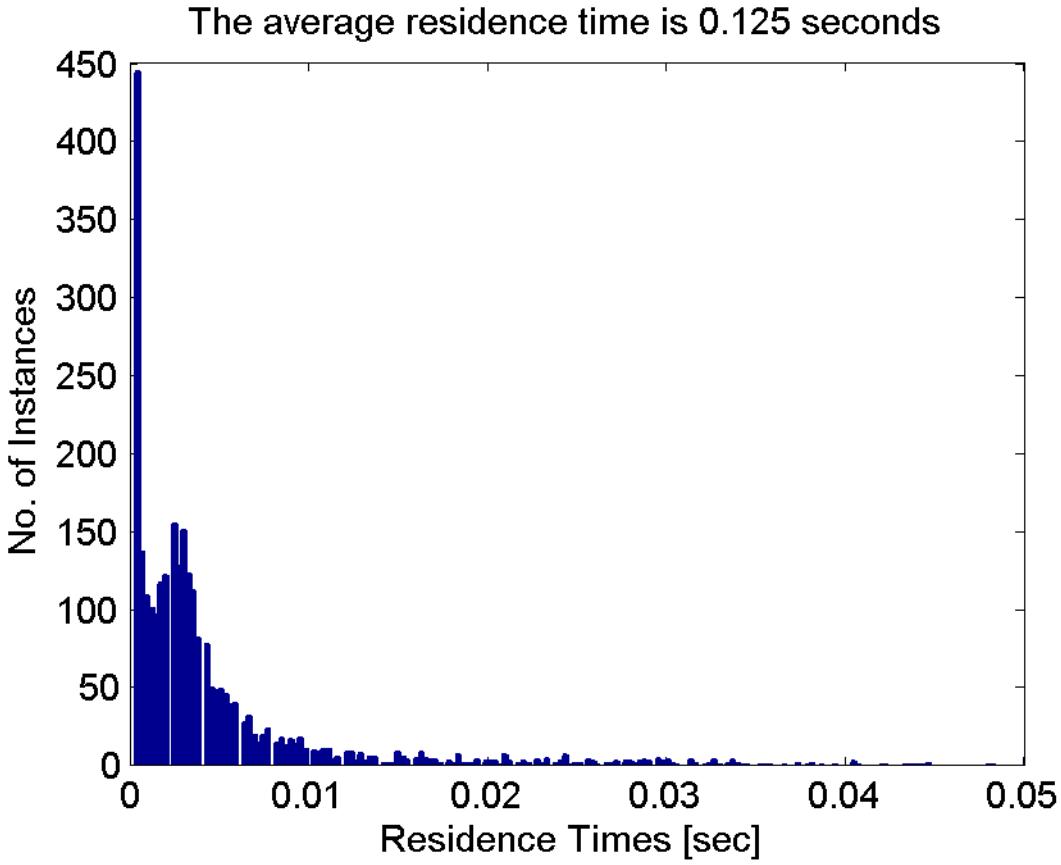

Figure E.30: The residence time distribution for the AR = 1 cavity at Re 30. The average residence time is 0.125 secs.

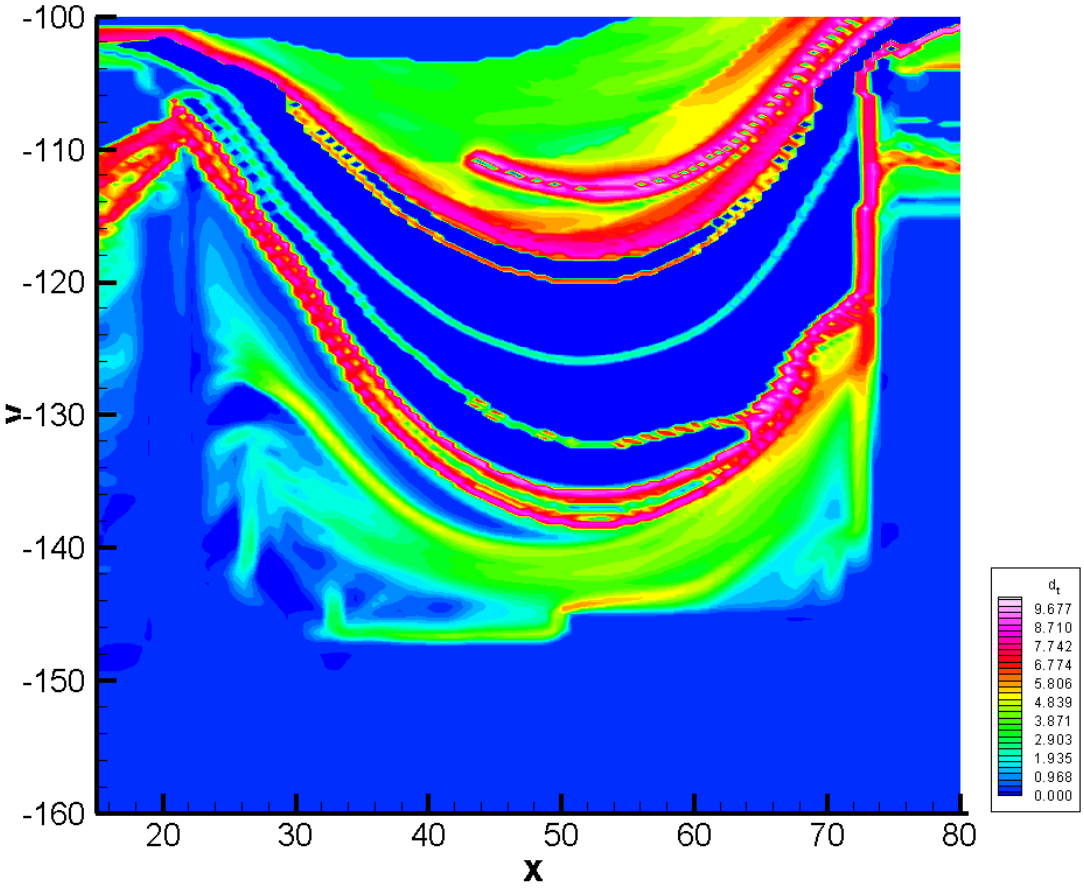

Figure E.31: The backward time LCS for the AR = 1 cavity at Re 23.

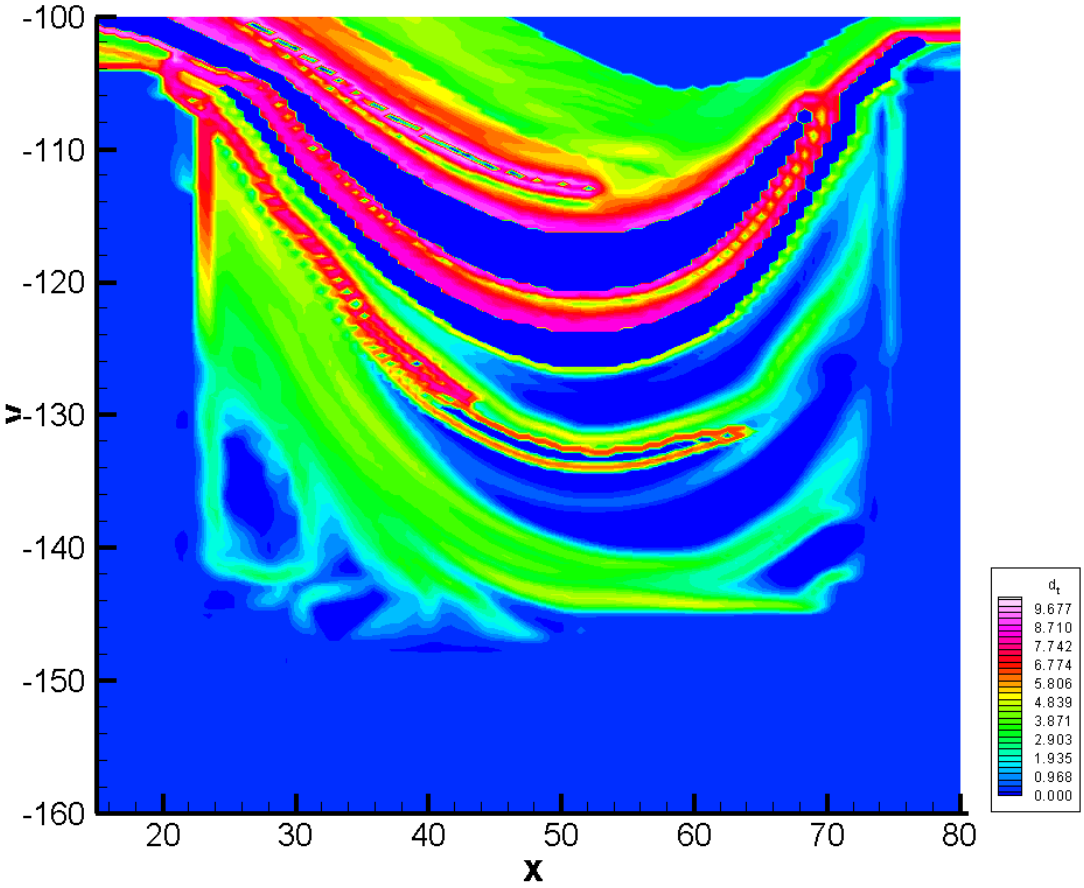

Figure E.32: The forward time LCS for the AR = 1 cavity at Re 23.

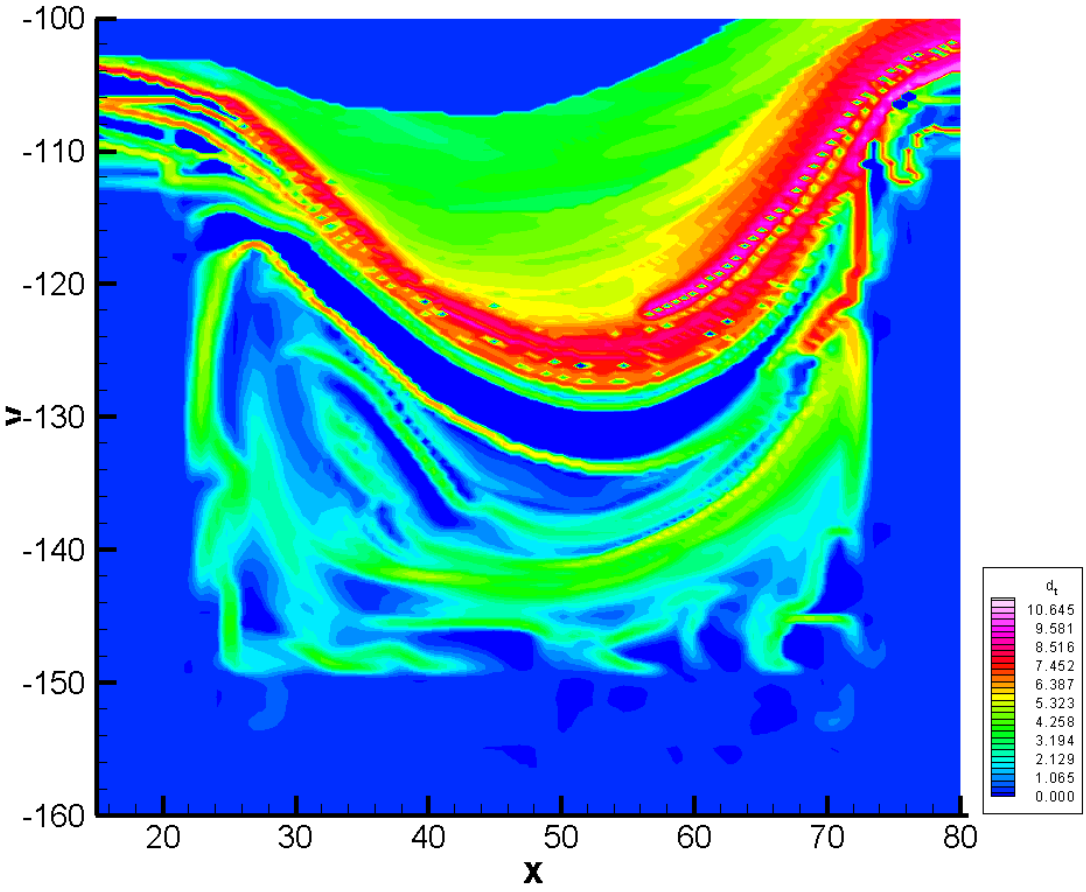

Figure E.33: The backward time LCS for the AR = 1 cavity at Re 24.

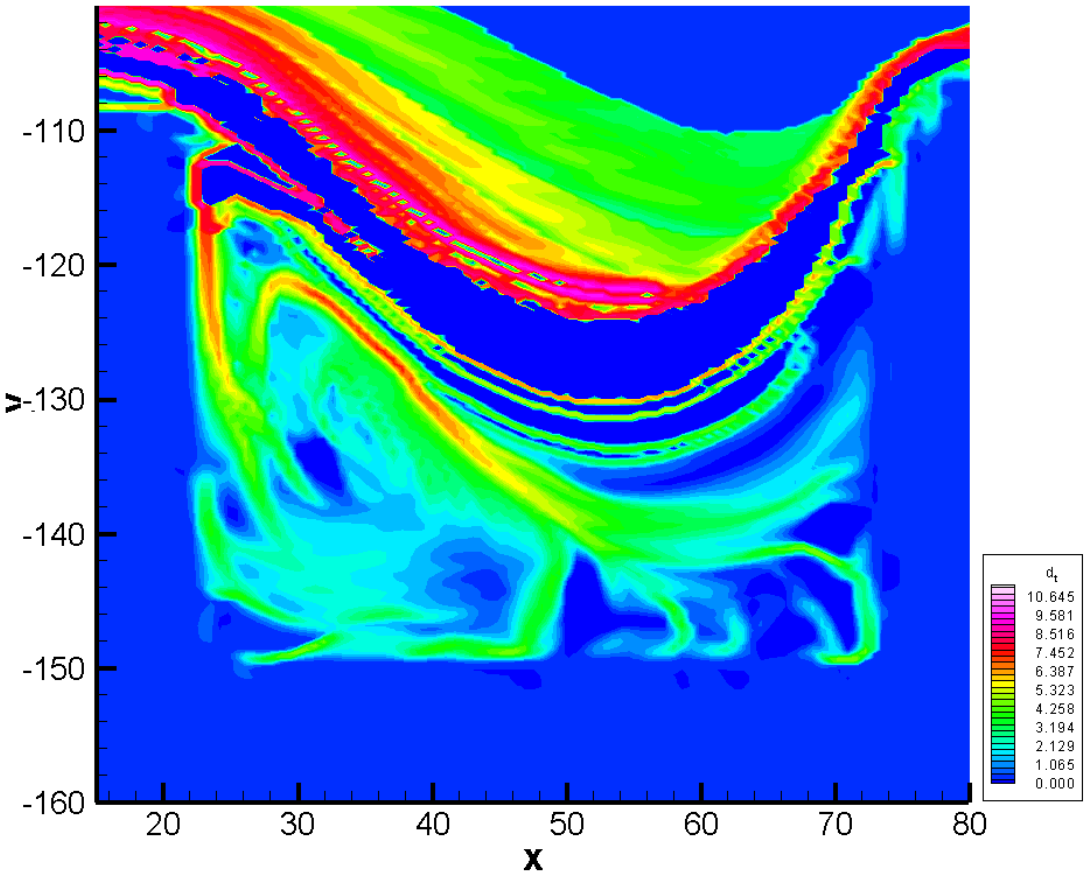

Figure E.34: The forward time LCS for the AR = 1 cavity at Re 24.

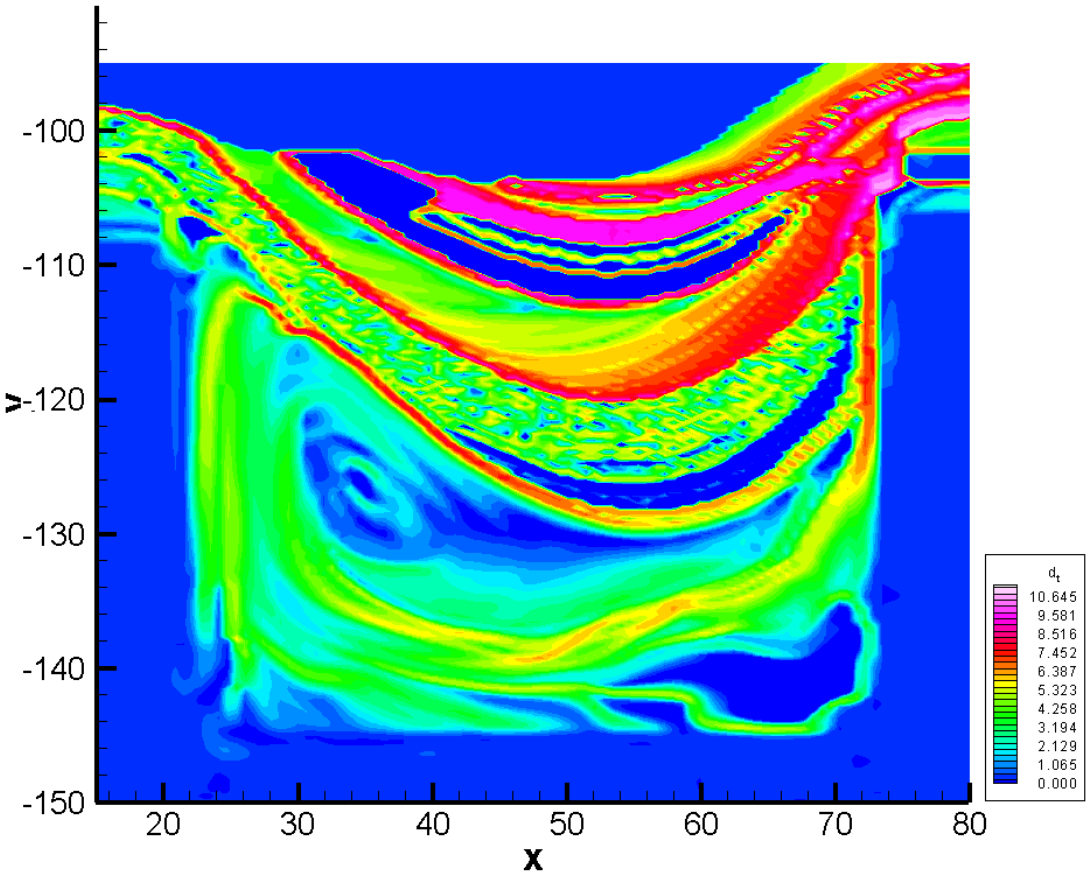

Figure E.35: The backward time LCS for the AR = 1 cavity at Re 30.

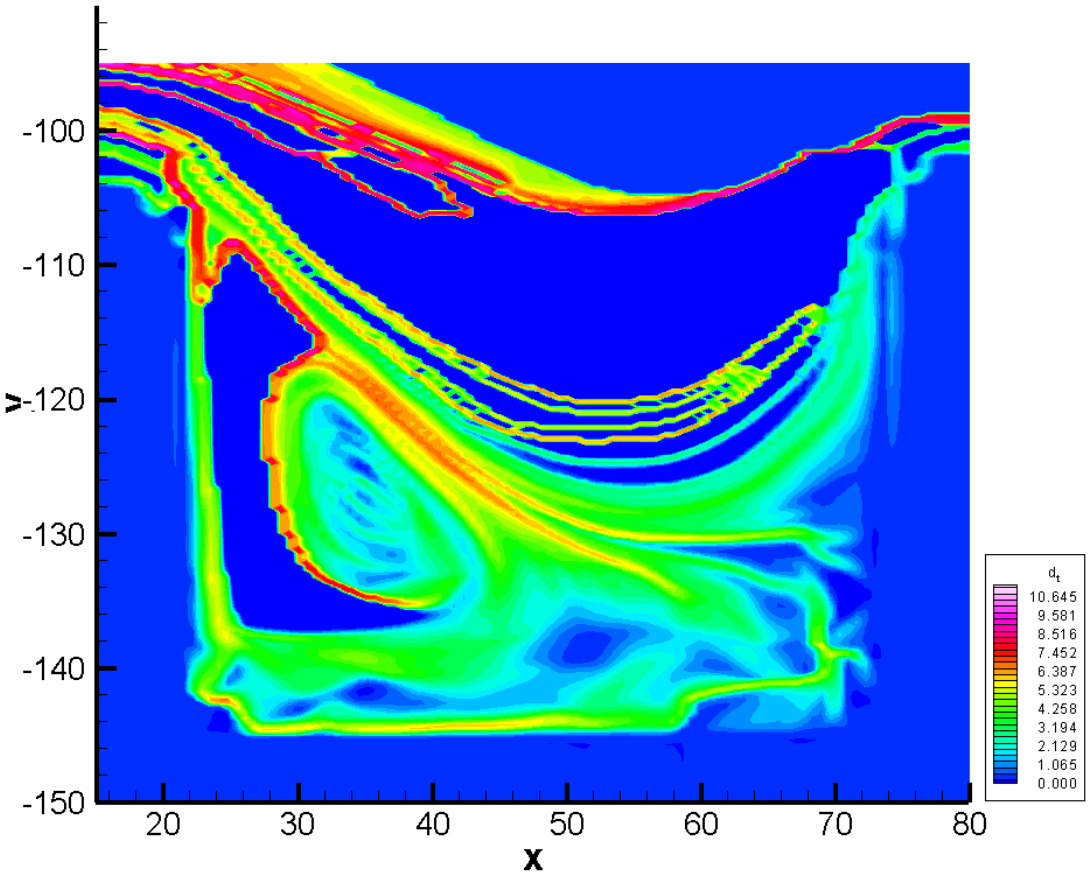

Figure E.36: The forward time LCS for the AR = 1 cavity at Re 30.

E.3 Data for the AR = 0.5 cavity

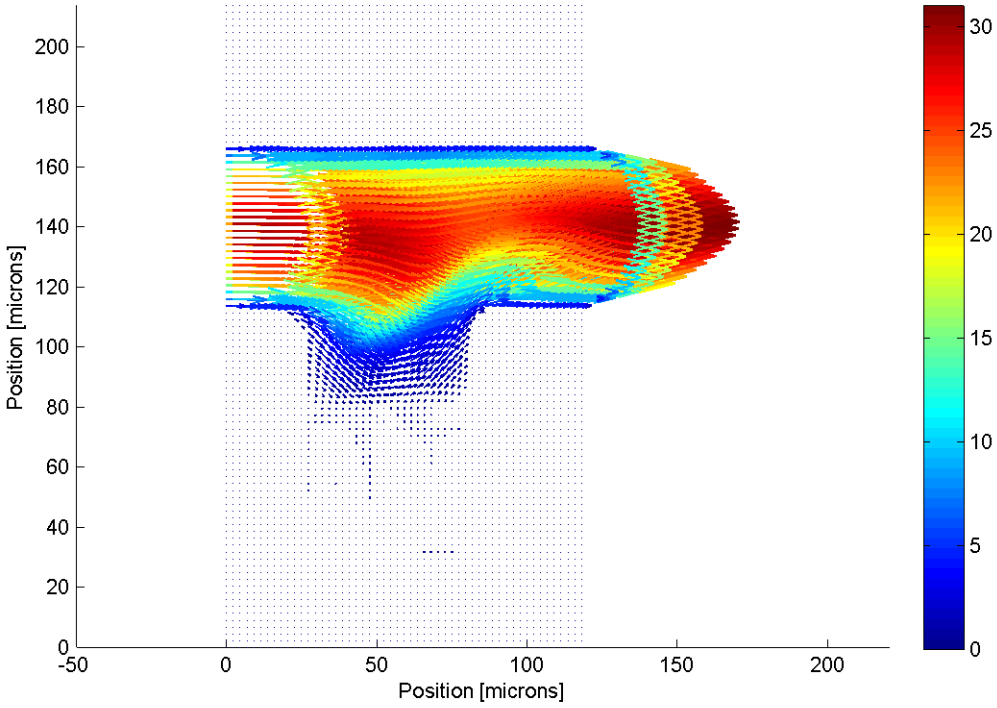

Figure E.37: Velocity field in the AR = 0.5 cavity at Re 0.1.

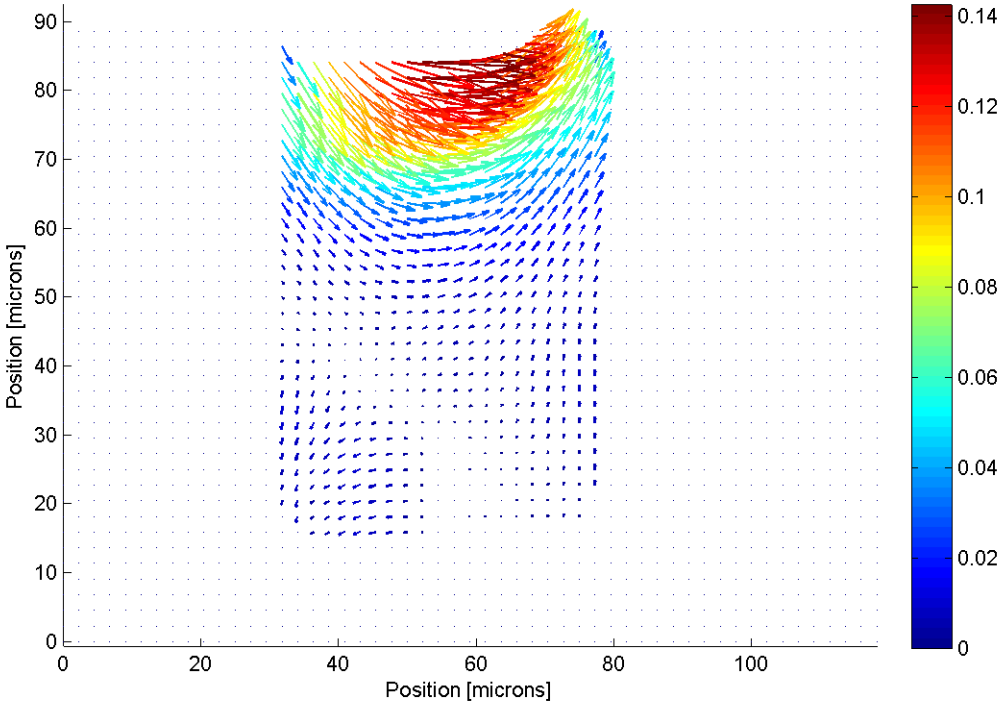

Figure E.38: Velocity field in the lower portion of the AR = 0.5 cavity at Re 0.1.

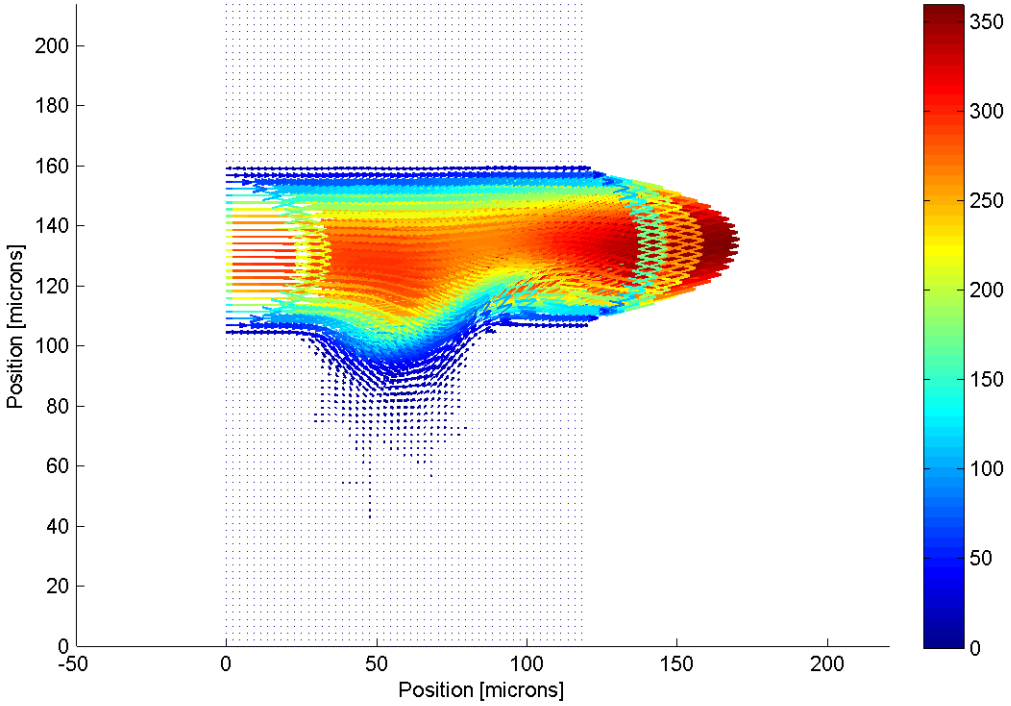

Figure E.39: Velocity field in the AR = 0.5 cavity at Re 15.

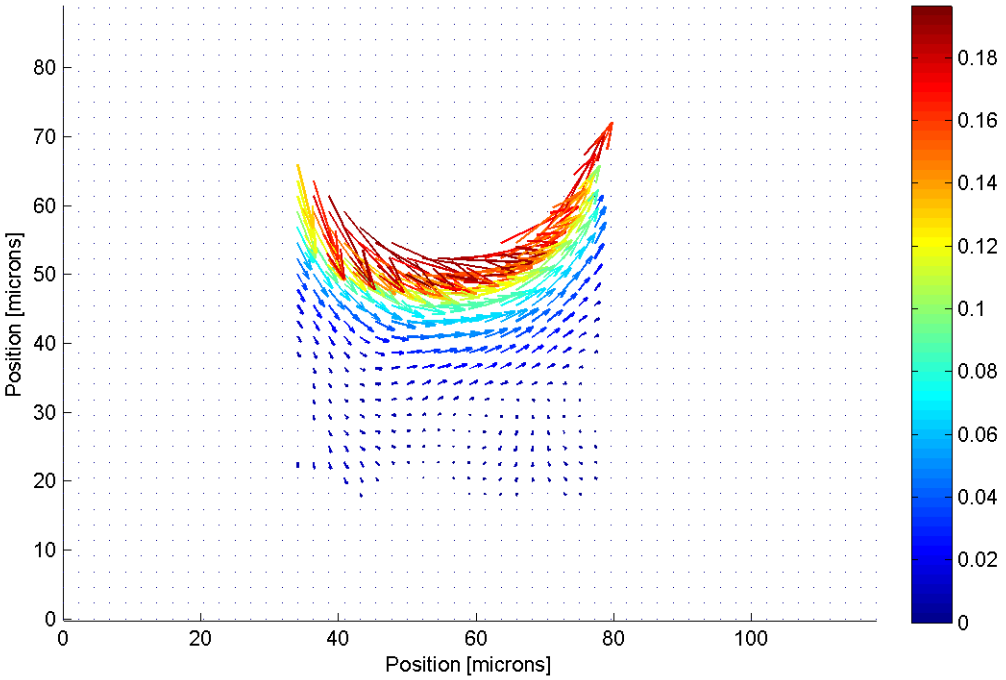

Figure E.40: Velocity in the lower portion of the AR = 0.5 cavity at Re 15.

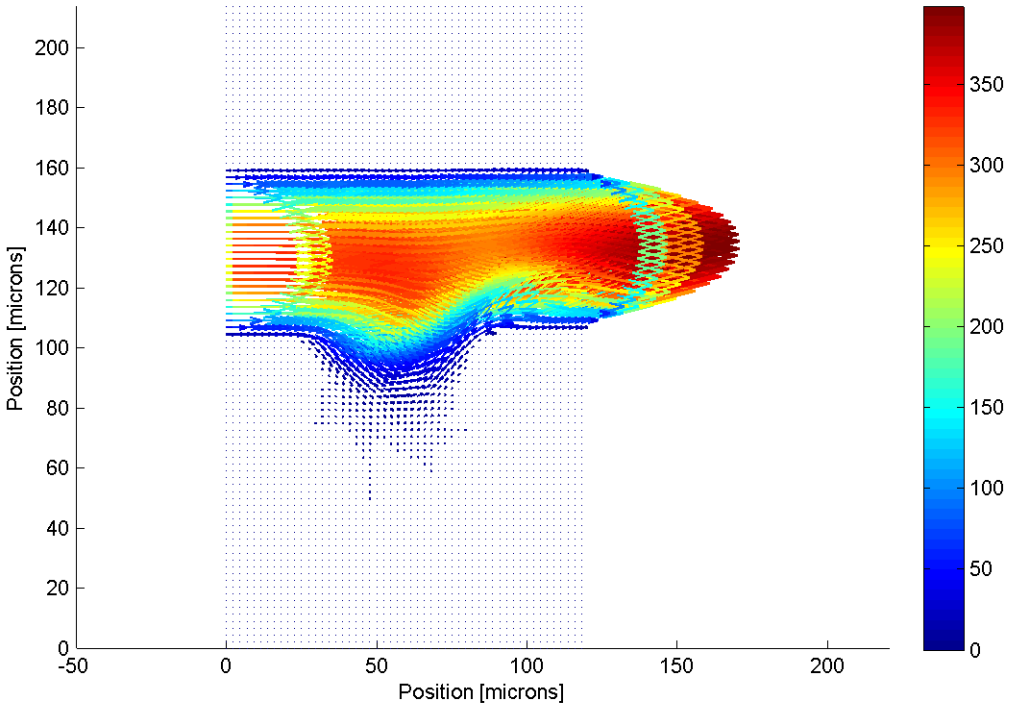

Figure E.41: Velocity field in the AR = 0.5 cavity at Re 17.

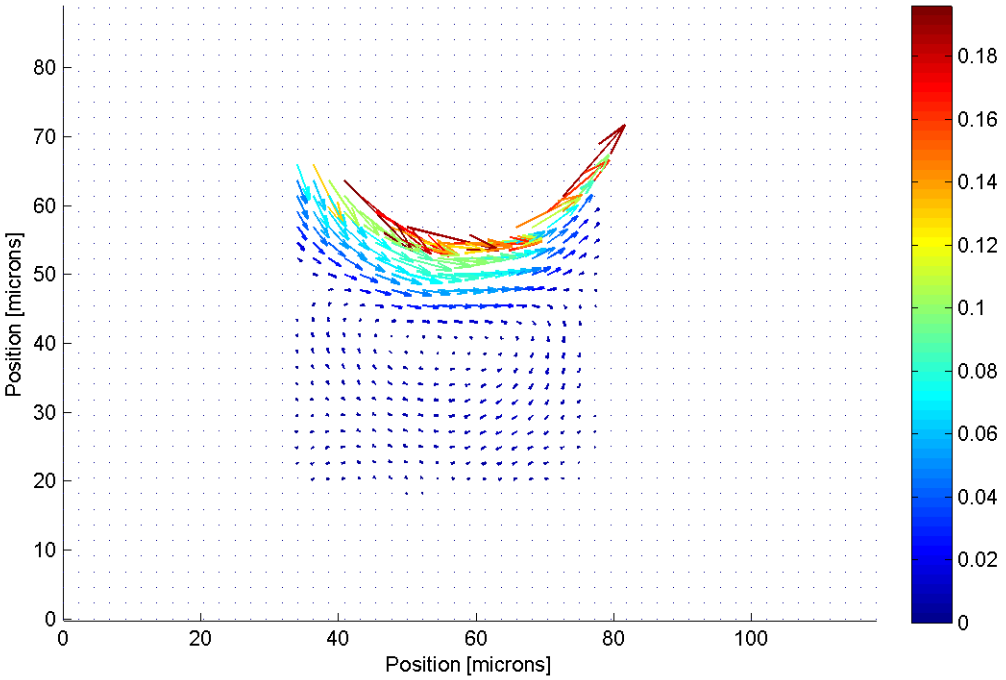

Figure E.42: The velocity field in the lower portion of the AR = 0.5 cavity at Re 17.

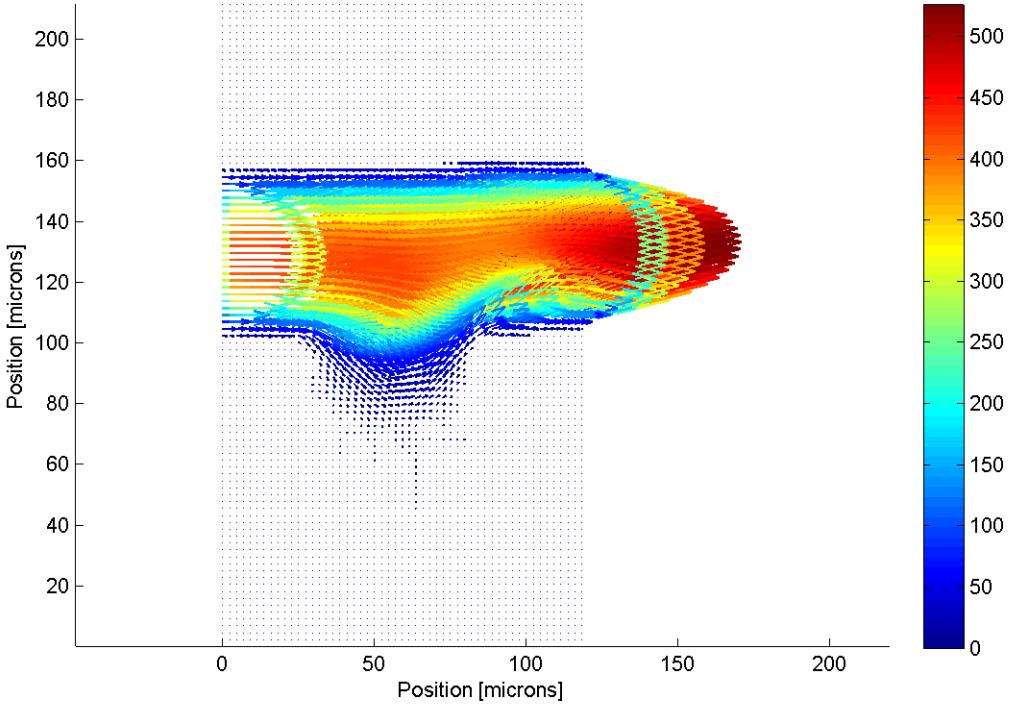

Figure E.43: Velocity field in the AR = 0.5 cavity at Re 20.

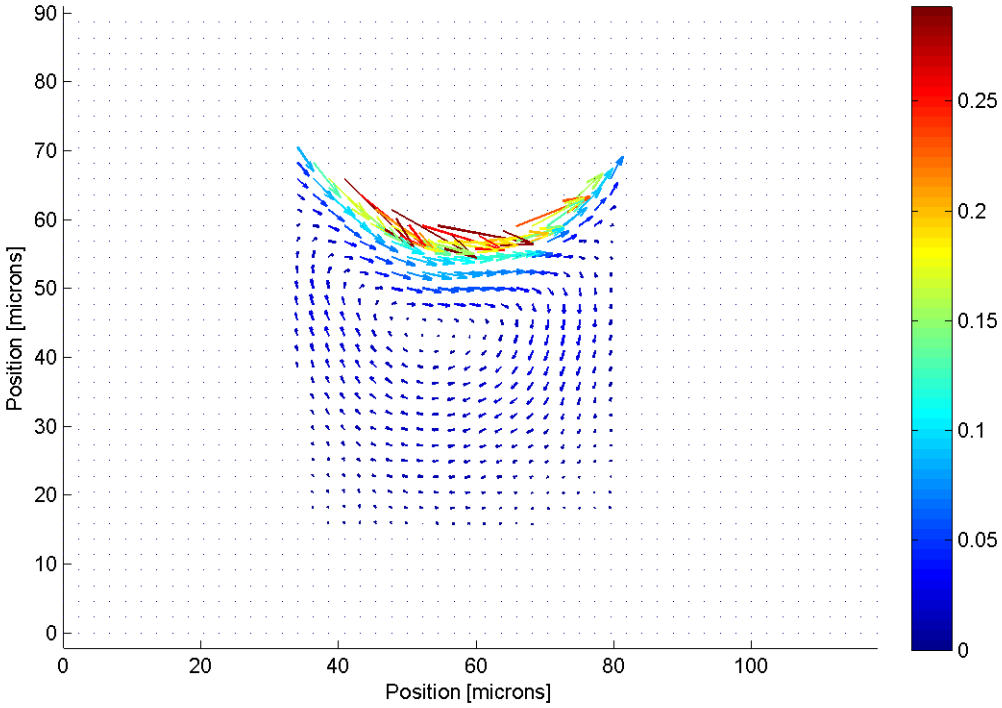

Figure E.44: Velocity field in the lower portion of the AR = 0.5 cavity at Re 20.

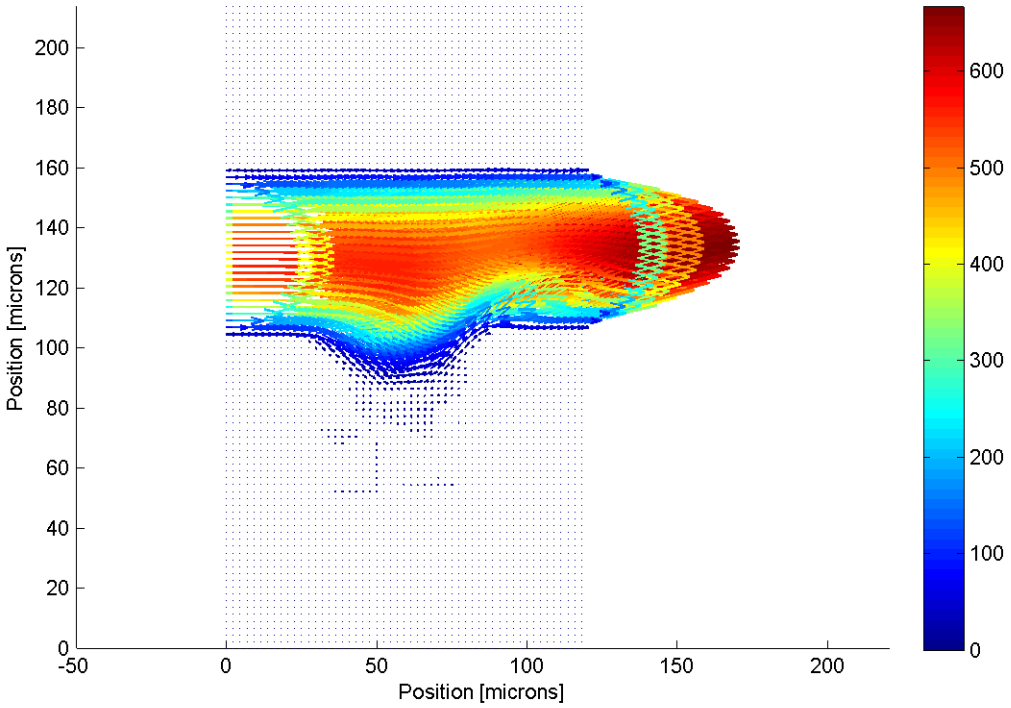

Figure E.45: Velocity field in the AR = 0.5 cavity at Re 30.

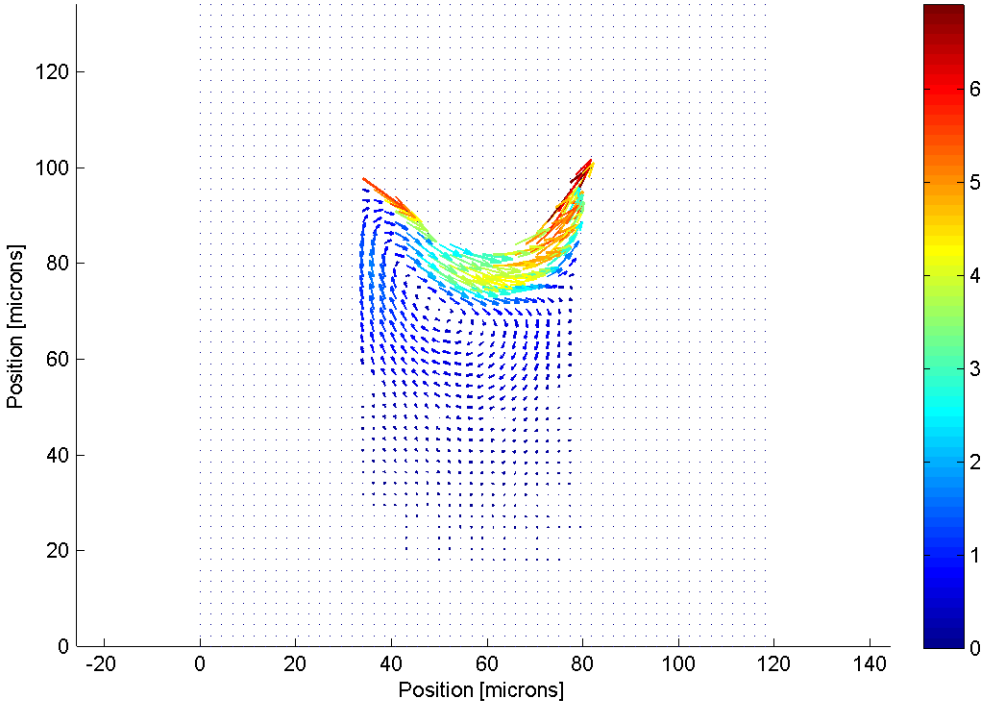

Figure E.46: Velocity field in the AR = 0.5 cavity at Re 30

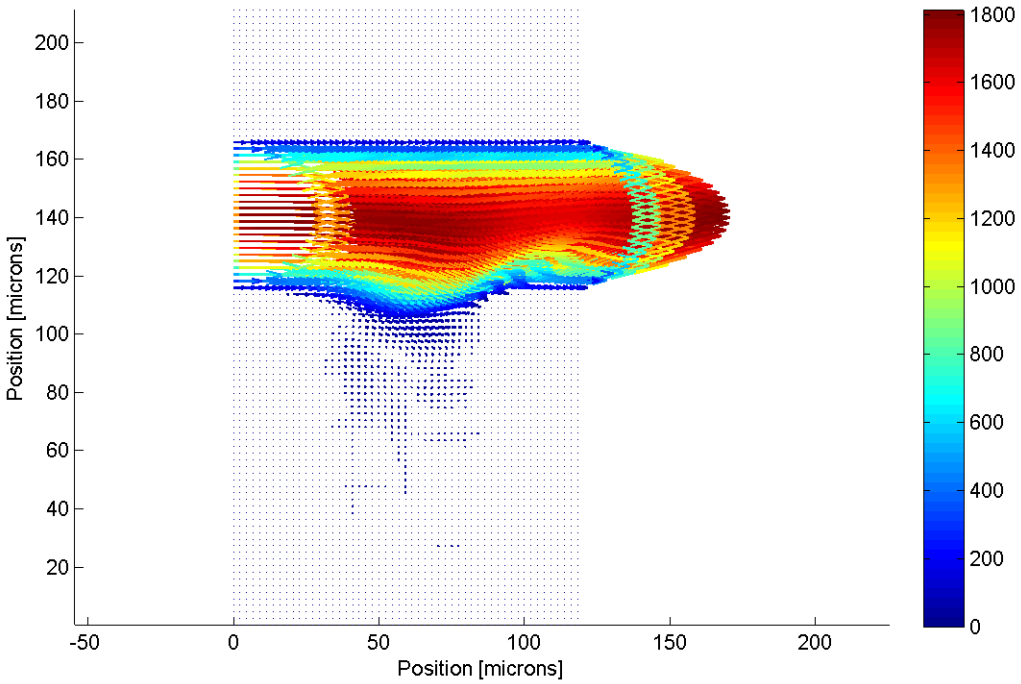

Figure E.47: Velocity field in the AR = 0.5 cavity at Re 50.

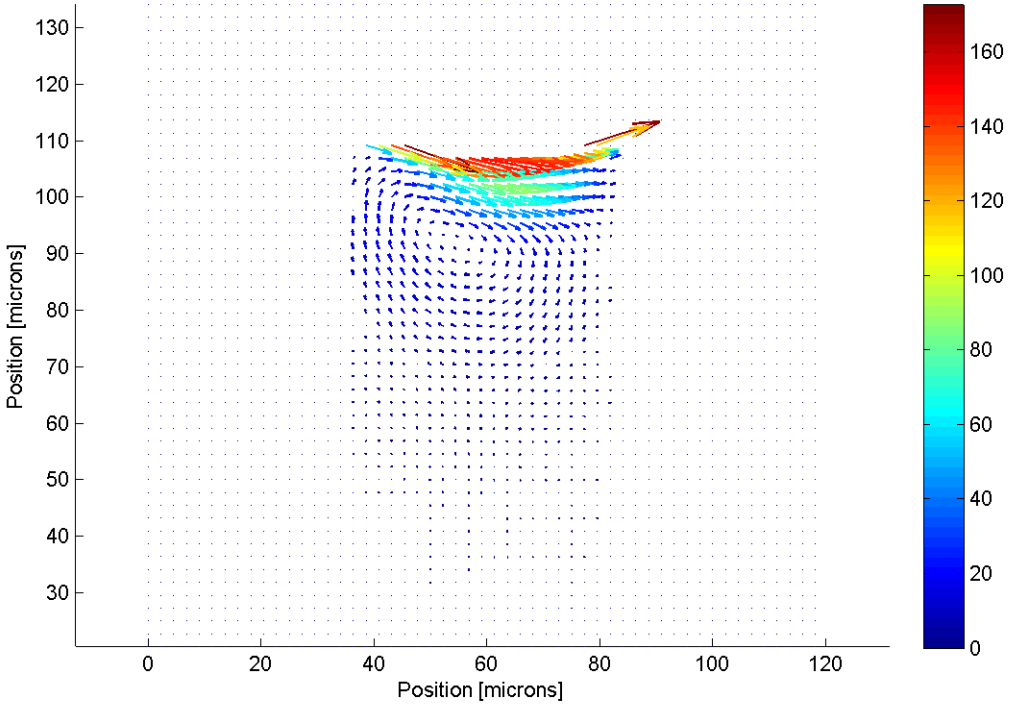

Figure E.48: Velocity field in the lower portion of the AR = 0.5 cavity at Re 50.

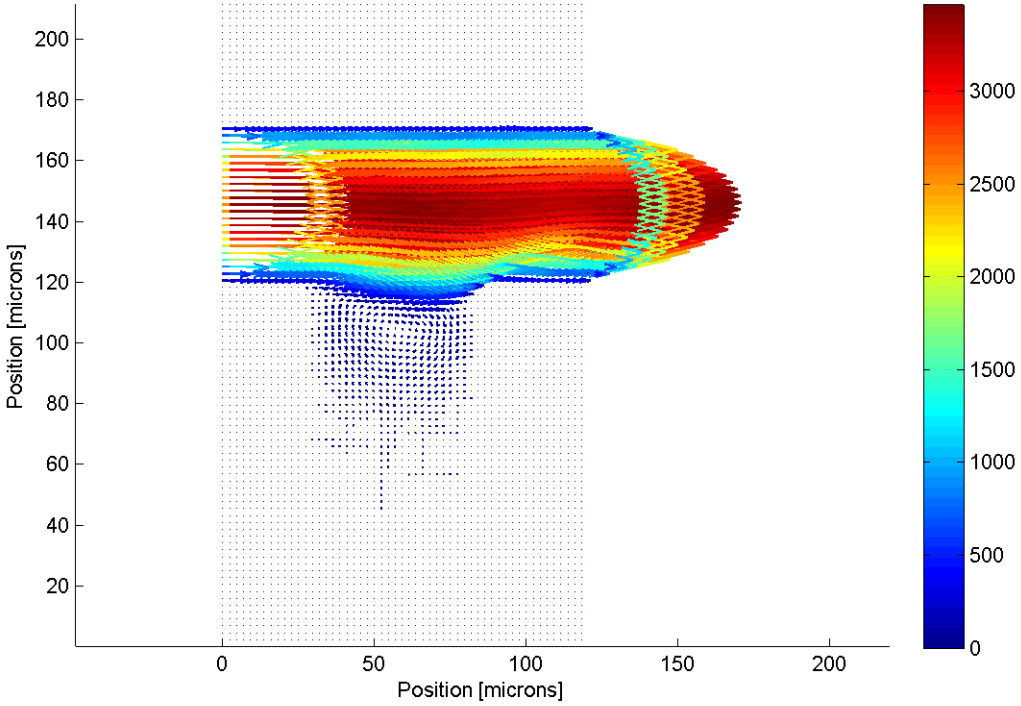

Figure E.49: Velocity field in the AR = 0.5 cavity at Re 100.

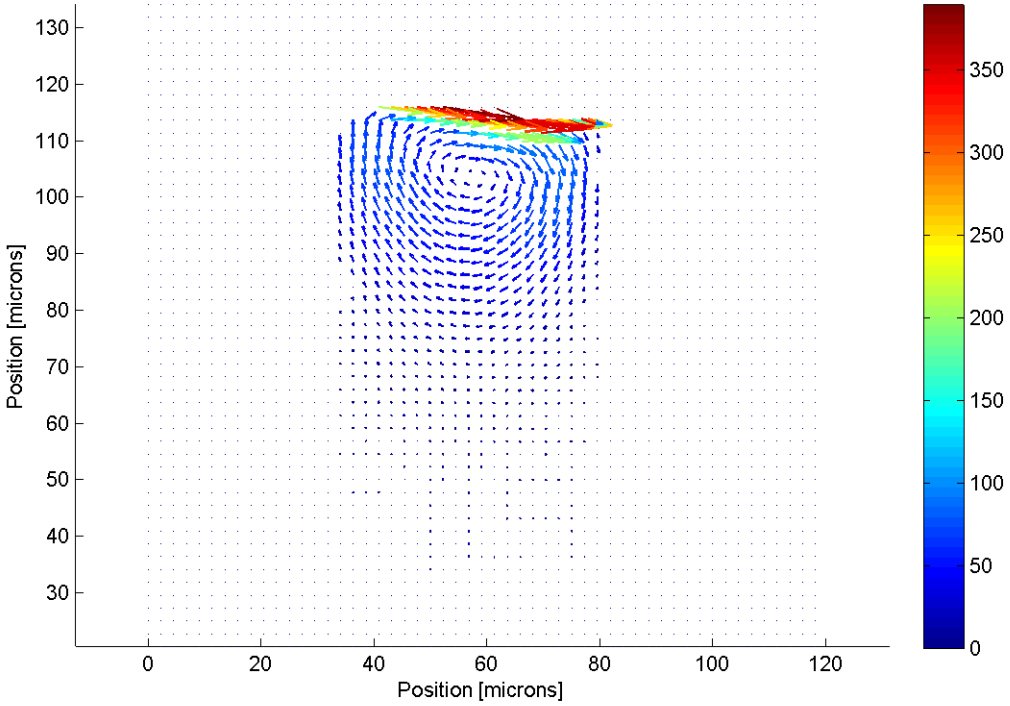

Figure E.50: Velocity field in the lower portion of the AR = 0.5 cavity at Re 100.

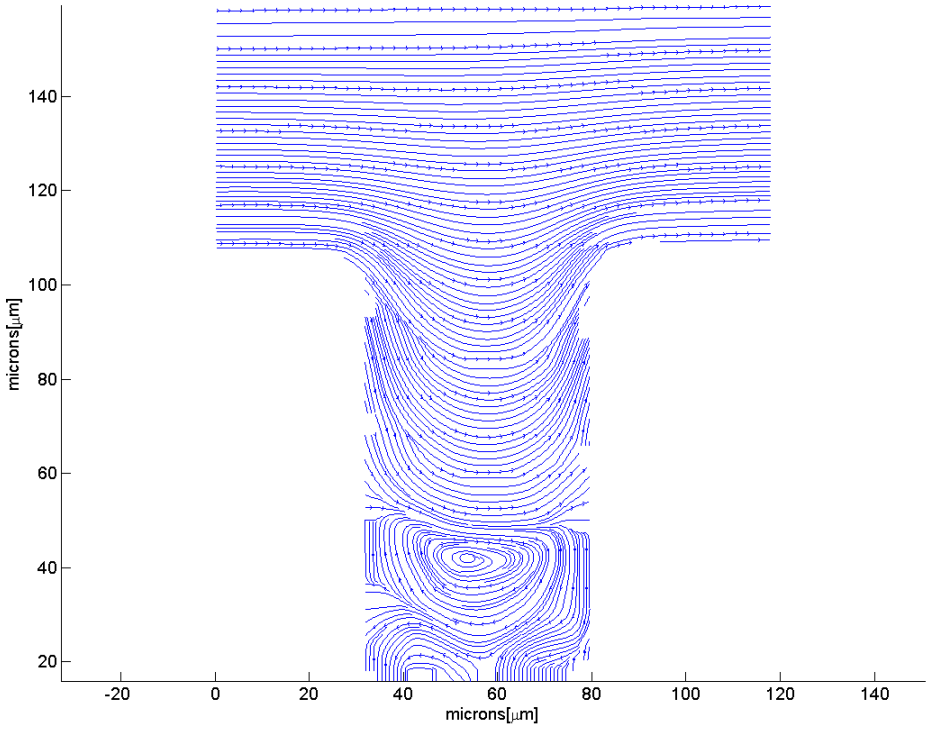

Figure E.51: A streamline image of steady flow in the AR = 0.5 cavity at Re = 17.

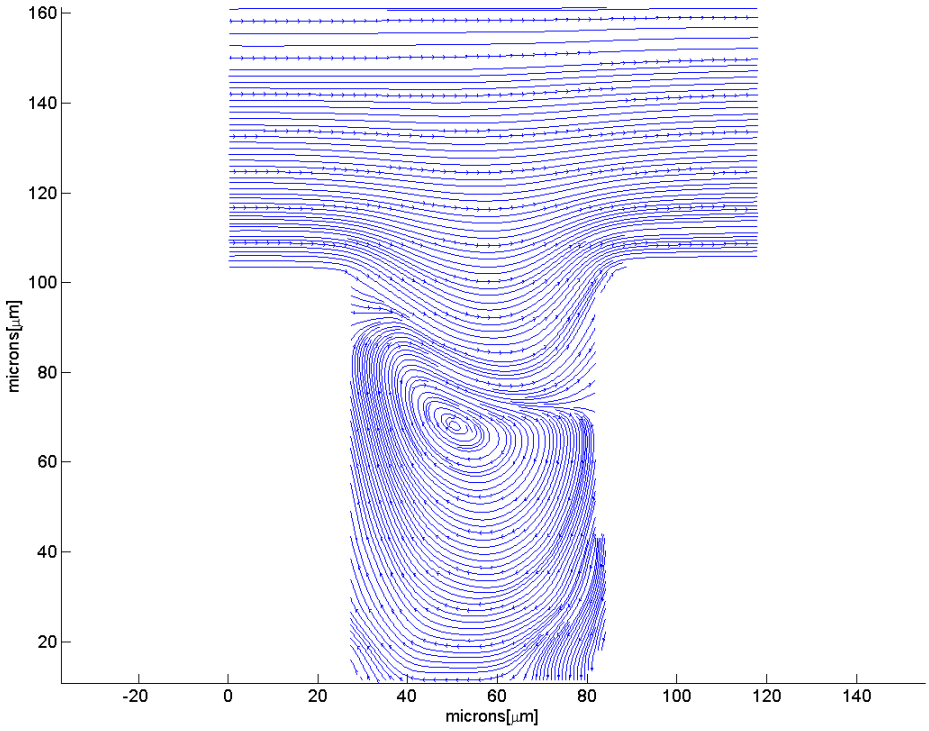

Figure E.52: A streamline image of steady flow in the AR = 0.5 cavity at Re 30.

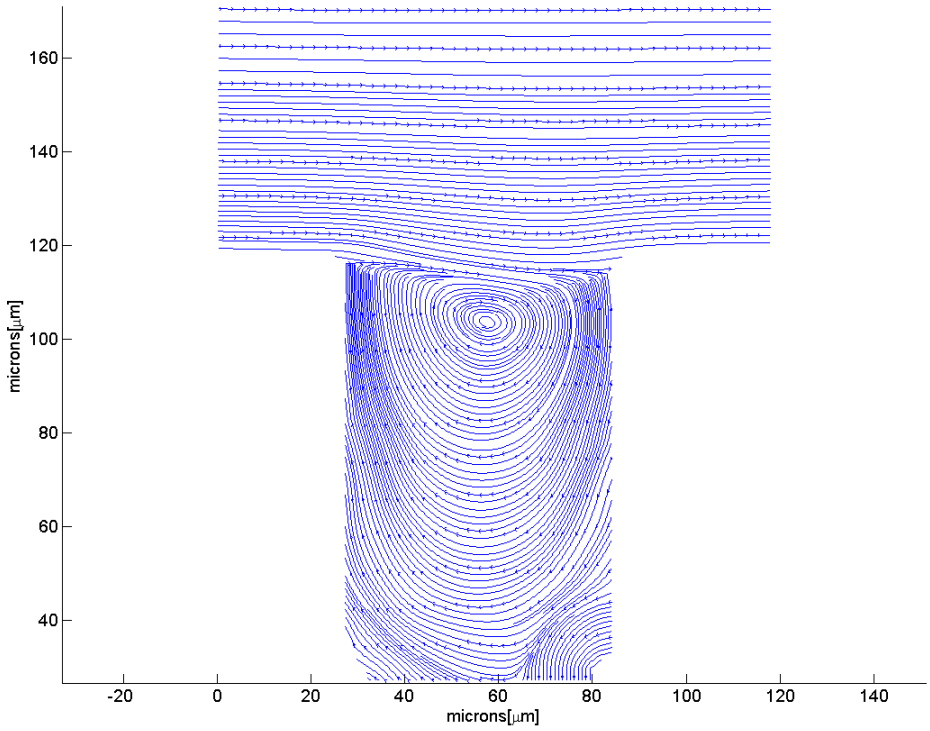

Figure E.53: A streamline image of steady flow in the AR = 0.5 cavity at Re 100.

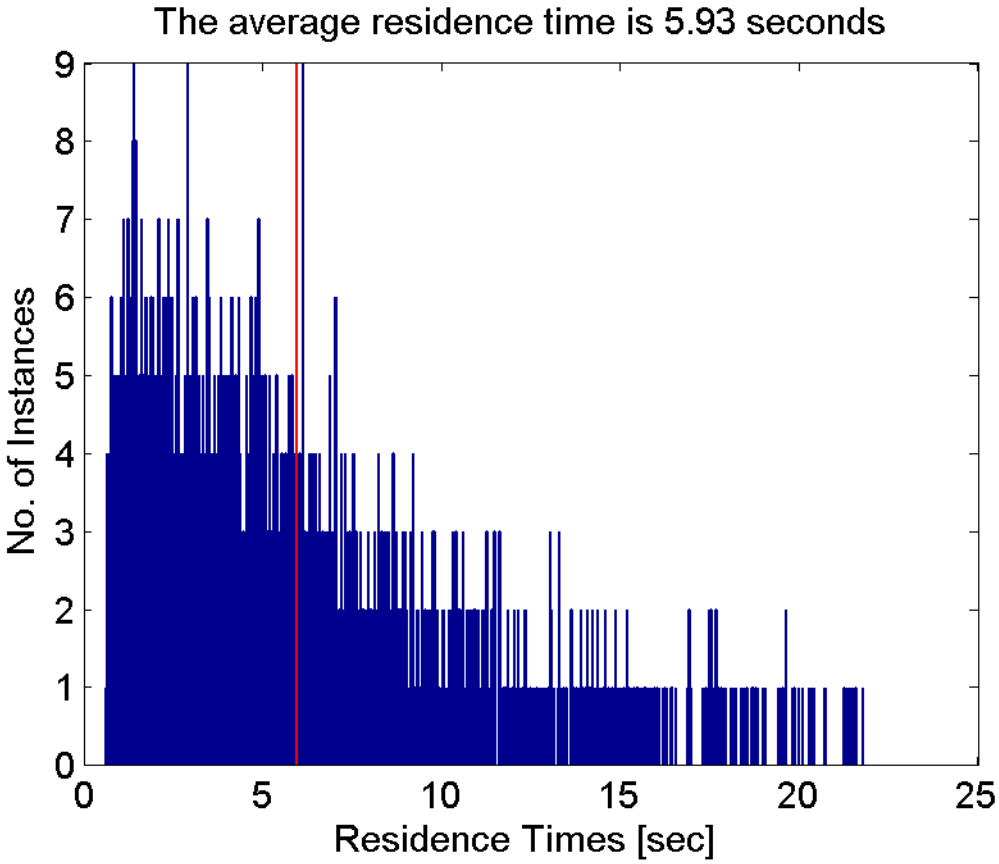

Figure E.54: The residence time distribution for the AR = 0.5 cavity at Re 0.1. The average residence time is 5.93 secs.

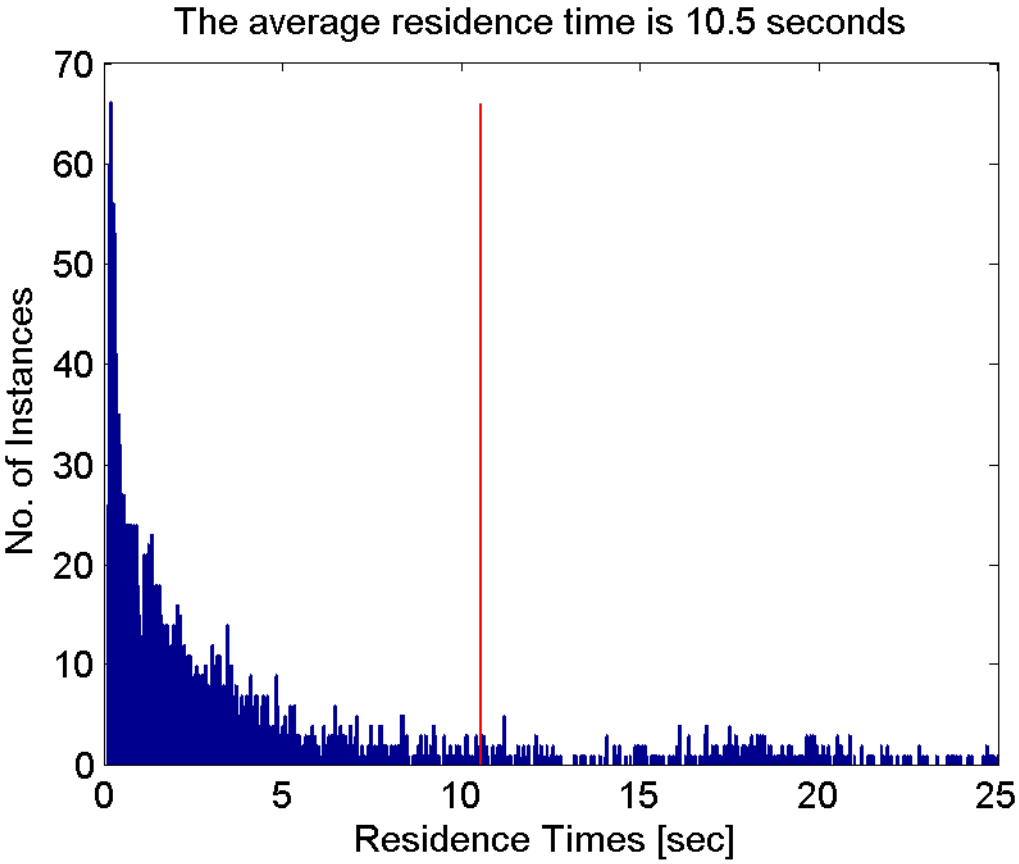

Figure E.55: The residence time distribution for the AR = 0.5 cavity at Re 15. The average residence time is 10.5 secs.

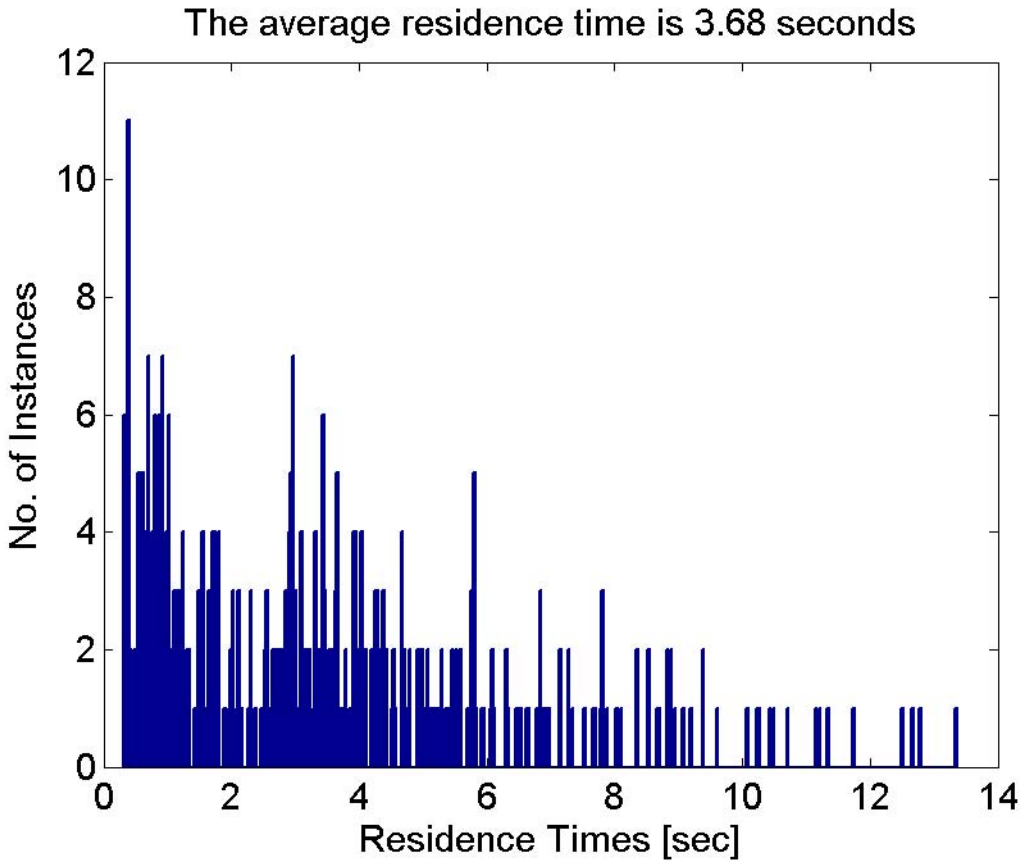

Figure E.56: The residence time distribution for the AR = 0.5 cavity at Re 17. The average residence time is 3.68 secs.

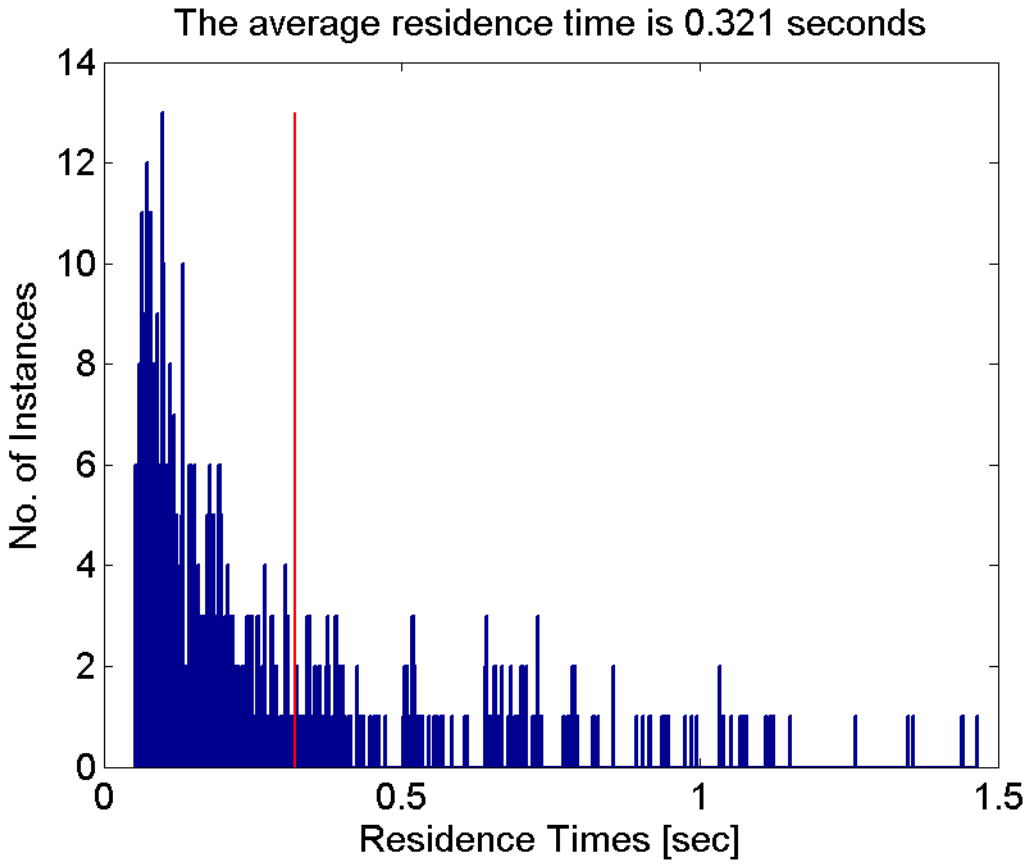

Figure E.57: The residence time distribution for the AR = 0.5 cavity at Re 20. The average residence time is 0.321 secs.

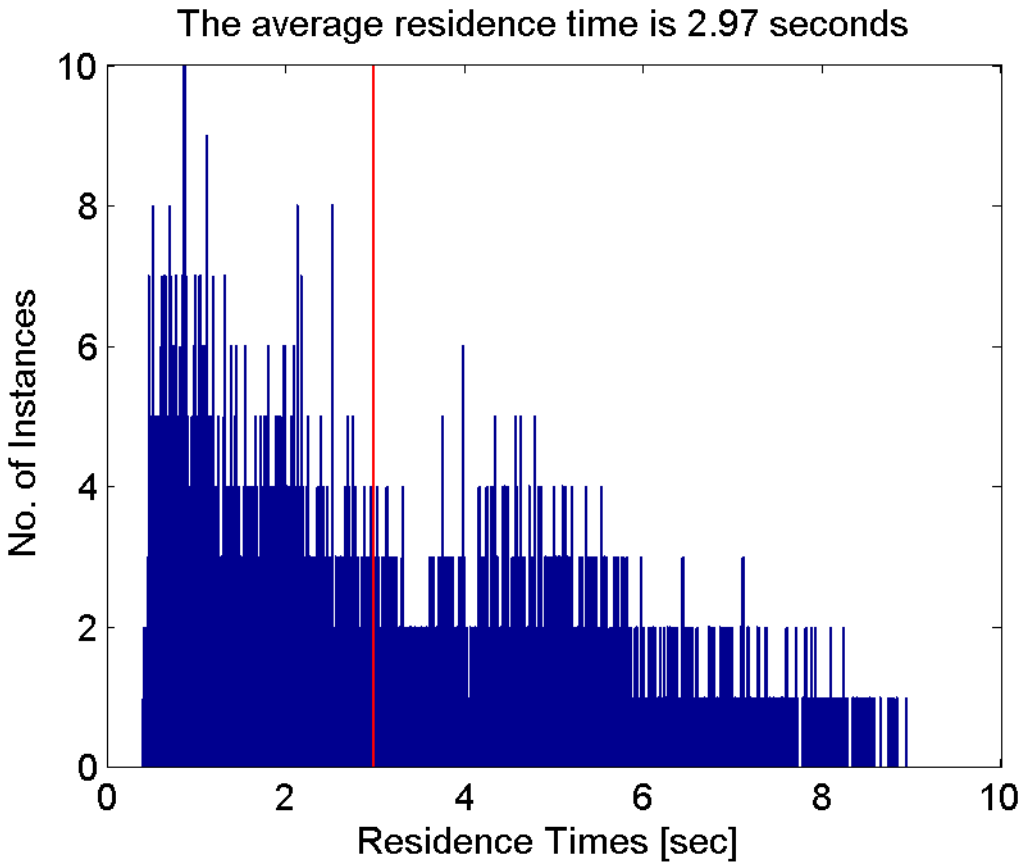

Figure E.58: The residence time distribution for the AR = 0.5 cavity at Re 27. The average residence time is 2.97 secs.

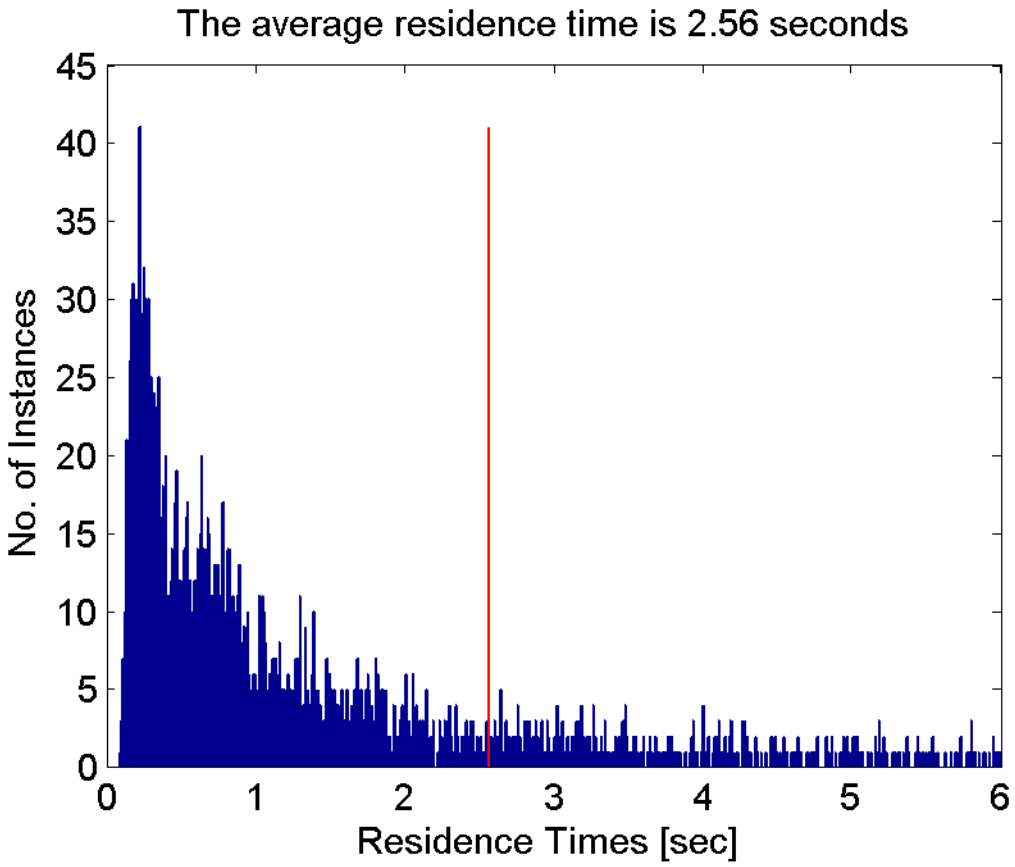

Figure E.59: The residence time distribution for the AR = 0.5 cavity at Re 30. The average residence time is 2.56 secs.

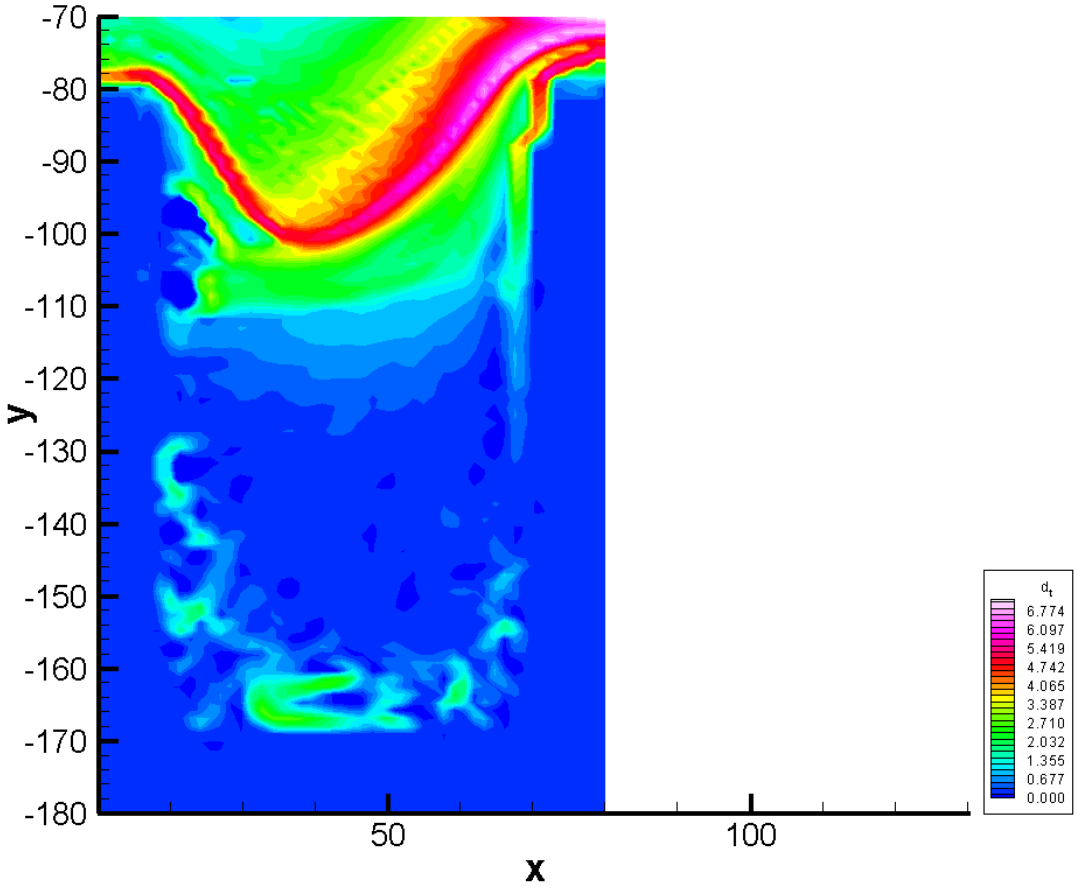

Figure E.60: The backward time LCS for the AR = 0.5 cavity at Re 0.1.

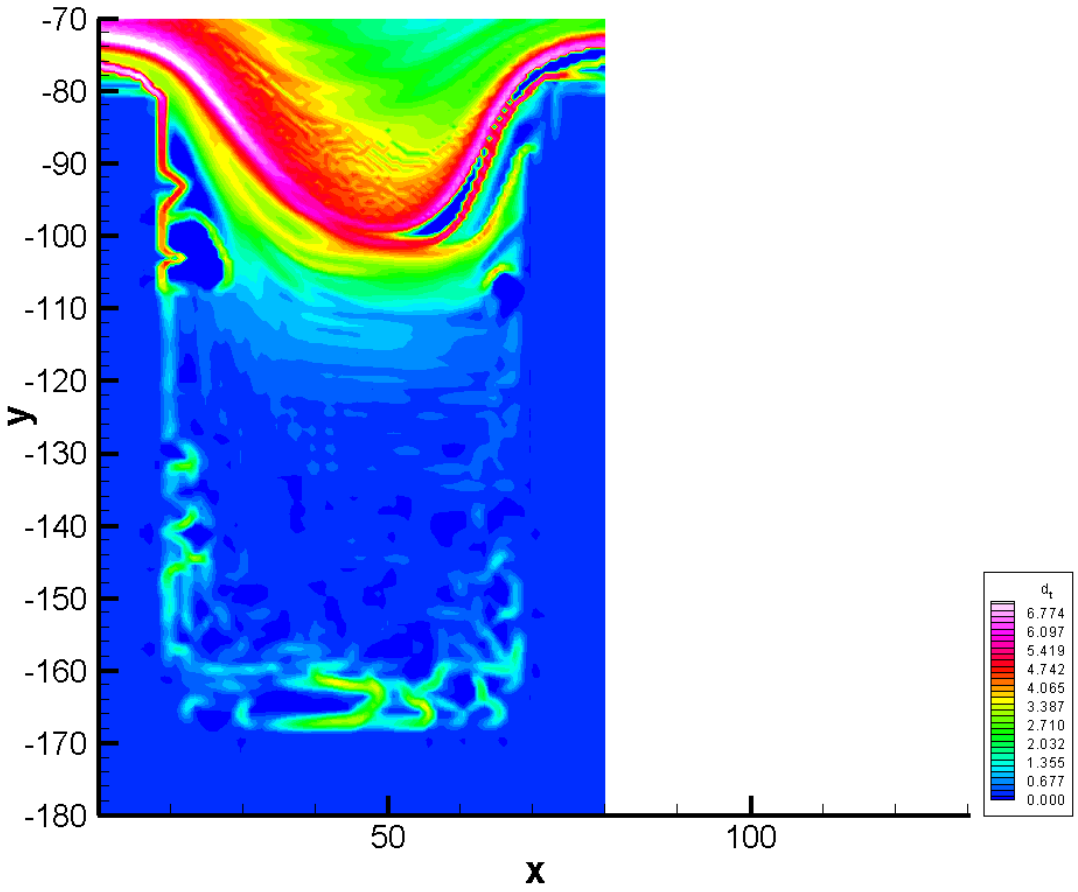

Figure E.61: The forward time LCS for the AR = 0.5 cavity at Re 0.1.

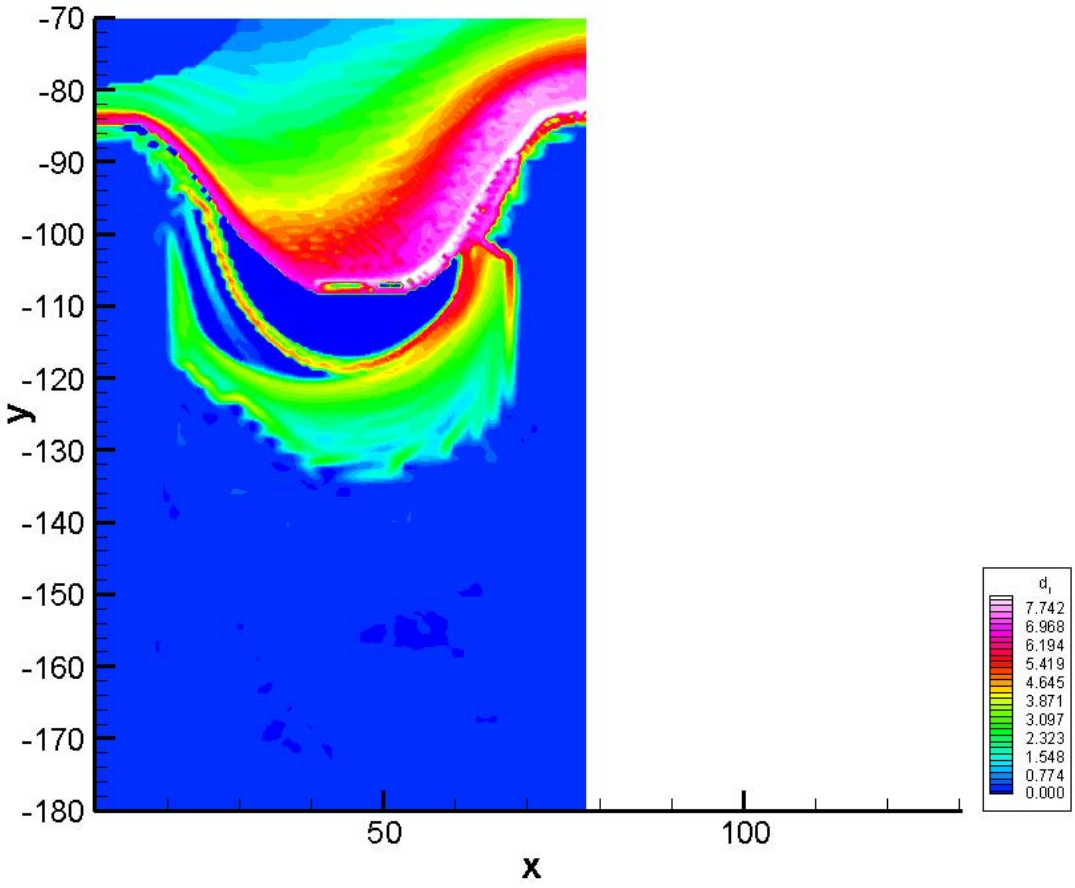

Figure E.62: The backward time LCS for the AR = 0.5 cavity at Re 17.

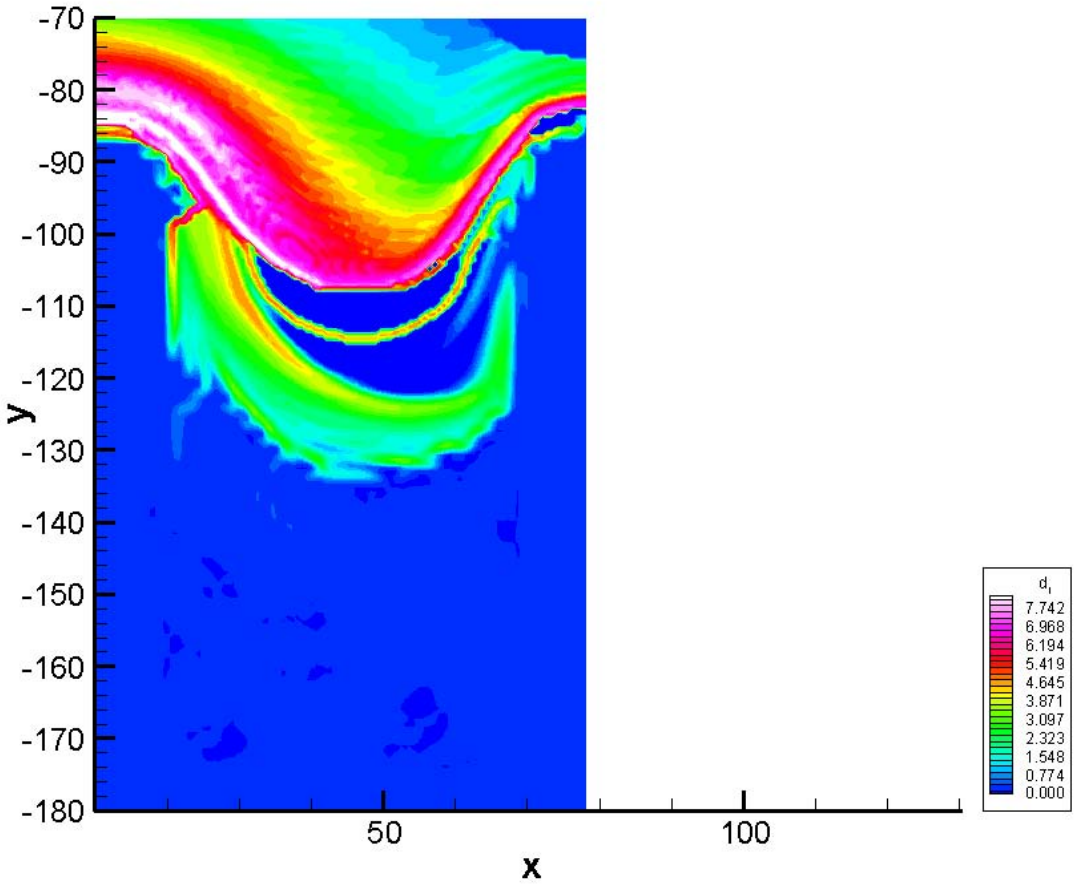

Figure E.63: The forward time LCS for the AR = 0.5 cavity at Re 17.

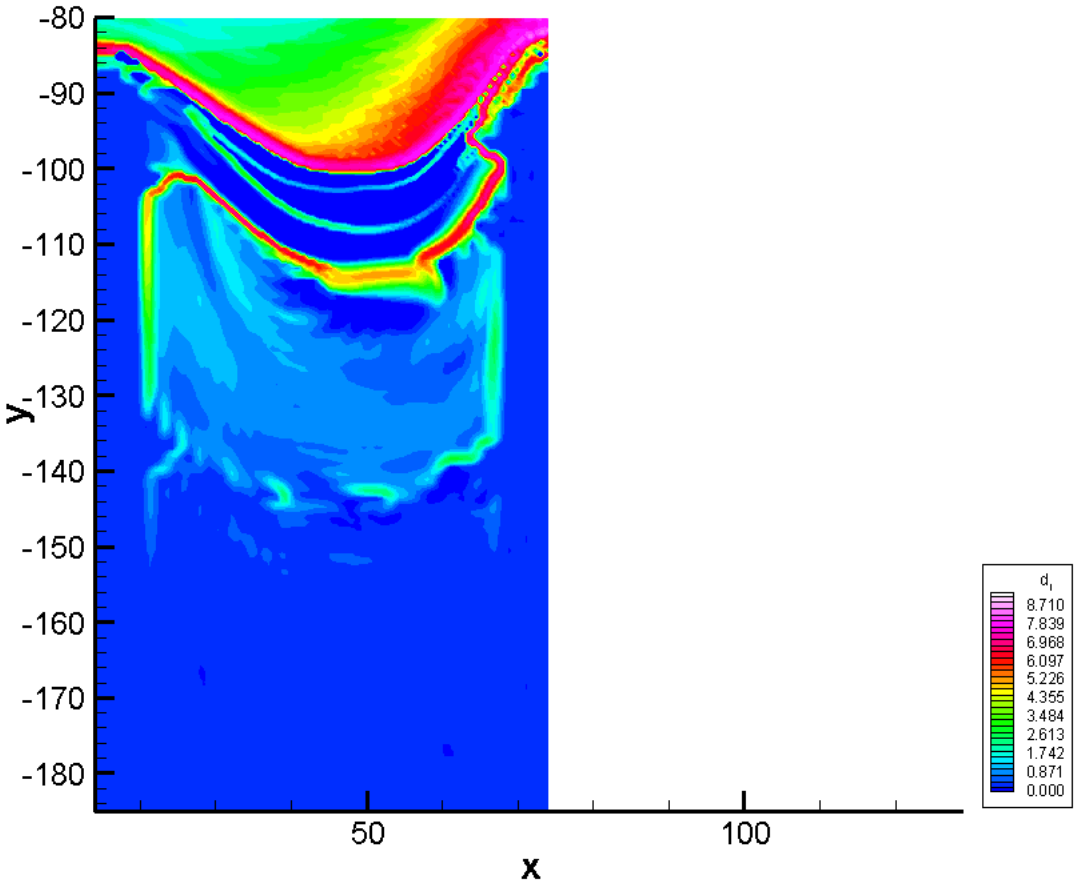

Figure E.64: The backward time LCS for the AR = 0.5 cavity at Re 30.

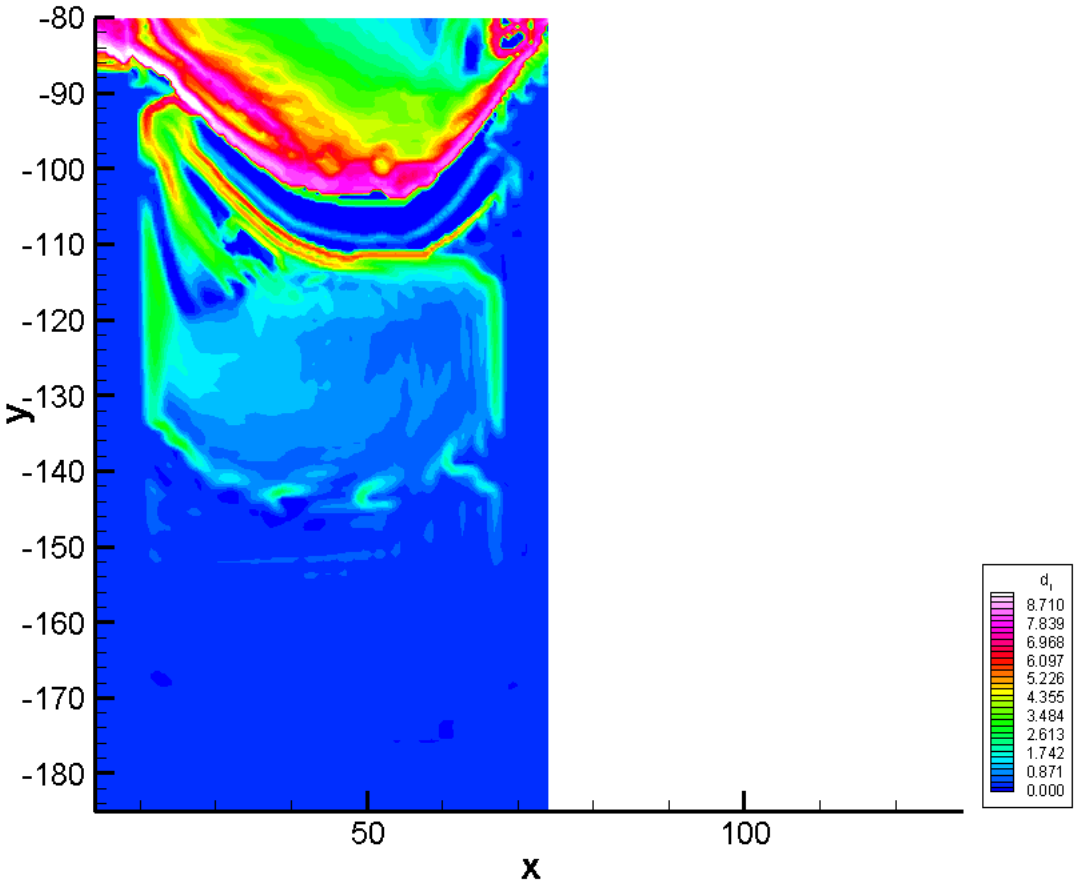

Figure E.65: The forward time LCS for the AR = 0.5 cavity at Re 30.