I would like to thank Prof. Young for his comments. The amendments done is summarized below

Sect 2.1 “However, this mechanism can occur on a slender body immersed in any Newtonian fluid” I suggest deleting the word “Newtonian”, as written it still implies (to me at least) the mechanism cannot occur in a non-Newtonian fluid. The next sentence makes it clear that a Newtonian fluid has been considered in the thesis.

The phrase was changed to “However, this mechanism can occur on a slender body immersed in a fluid,” kindly refer page 5 of the amended thesis.

Fig. 2.1 Caption reads “Induced angle of attack generated on a square prism due to the resultant of free-stream velocity of the fluid U and transverse velocity ydot of the body”.

Reviewer original comment: If the body is moving downwards (ydot positive, as stated in the text), then wouldn't the effective angle of attack on the body (which is an angle by definition measured in the reference frame of the body) have the opposite sign to that shown in the figure, and the lift would oppose the motion (i.e. the lift force would be 180 degrees out of phase with the motion, not in phase with it as stated in the text)?

Student response: Taking the downward direction as positive means that a positive angle of attack is given by a clockwise rotation (pointing the front of the body “up”). As illustrated in figure 2.1 the cross section under the influence of galloping generates a force perpendicular to the fluid flow. In order to generate this transverse force the body should be oscillating in the transverse direction of the fluid flow. For bodies under the influence of galloping this force is in the same direction as the transverse velocity. Therefore, for galloping to occur, pointing the front of the body up needs to produce a lift force down, which is the opposite direction to what would be expected for an airfoil – hence why airfoils are not susceptible to transverse galloping. Hence the downward direction is taken as positive.

Reviewer further comment: The caption and figure are still incorrect in my view. If the body moves downwards, then it “feels” an upwards relative motion of the fluid towards it. So the induced velocity and the angle of attack are in the wrong direction. To see this, consider the case with no free stream velocity, just the body motion downwards. From the point of view of the body, the induced flow is coming at it upwards vertically from below, not downwards as is currently drawn in the figure. This is independent of whether one chooses to define the angle of attack positive nose up or positive nose down, it just means that a downwards body motion creates and angle of attack that is nose-up relative the resultant flow, you can then freely define this as positive or negative. This can still be consistent with the student response above, if as stated a nose up angle of attack generates a downwards force (opposite to what would be expected for an airfoil), in the same direction as the body motion. To further this point, Figure 2.1 currently does not appear to agree with Figure 5.7, where it is seen that a positive incidence angle corresponds to the nose of the body rotating up relative to the flow, i.e. the flow is coming at the body from below the centreline, not from above it as drawn in Figure 2.1.

The author agrees with the reviewer. The figure was altered to show the velocities relative to the body and the caption was updated kindly refer page 6

Fig. 4.11: “Velocity signal (right) and the corresponding power spectrum (left)”

Should be “Velocity signal (left) and the corresponding power spectrum (right)”. Same in Fig. 4.12.

Corrected kindly refer to pages 61,62 and 72