B5.4 Waves & Compressible Flow **Trinity Term**

Consultation session questions

- A quick question about supersonic flow past a thin wing. On page 60 of the notes, where we're finding the value of ϕ in each of the 6 regions, in regions 3 and 6, is ϕ supposed to be 0 or a constant (so that we have continuity between regions 2 and 3, 5 and 6)? The notes say that ϕ should be 0 (so that they are zones of silence) but in the lectures, you imposed continuity so that ϕ are non-zero constants instead, so I was just wondering which one I should use? Can we still say that there are zones of silence if ϕ is non-zero?
- 2012 Q1(b)(iv) Could you talk through whether the waves are dispersive?
- 2012 Q2(b) Could you just talk through how to apply FT for this question?
- 2021 Q3(c)(ii) Unsure of how to approach this part!!
- 2013 Q1(c) Could you talk through the BCs we need to apply here?
- 2013 Q2(a)(iii) Could you just quickly cover region of silence?
- 2013 Q2(b) I think I got the correct BCs and solution, but could I perhaps check these?
- 2013 Q2(c)(ii) Less sure on this part. Behaviour changes at y=0 but not sure what this means!
- 2016 Q3(b) Why must the fluid depths and velocities satisfy these relations to the left and the right of x = Vt? How come the shock / expansion fan doesn't at x = bt doesn't get in the way? Why do we know that the shock is a straight line?
- 2017 Q2(c,d) Please could you go over them.
- 2017 Q3(c) Please could you go over it.
- 2014 Q1(c) We will end up with $AJ_0 + BY_0$ as our solution, but could you just discuss the BCs we need here?
- 2014 Q3(d) Not quite sure how to combine previous parts? Was happy with all previous parts however.
- 2017 Q1(c) I'd much appreciate if we could go through the computations.