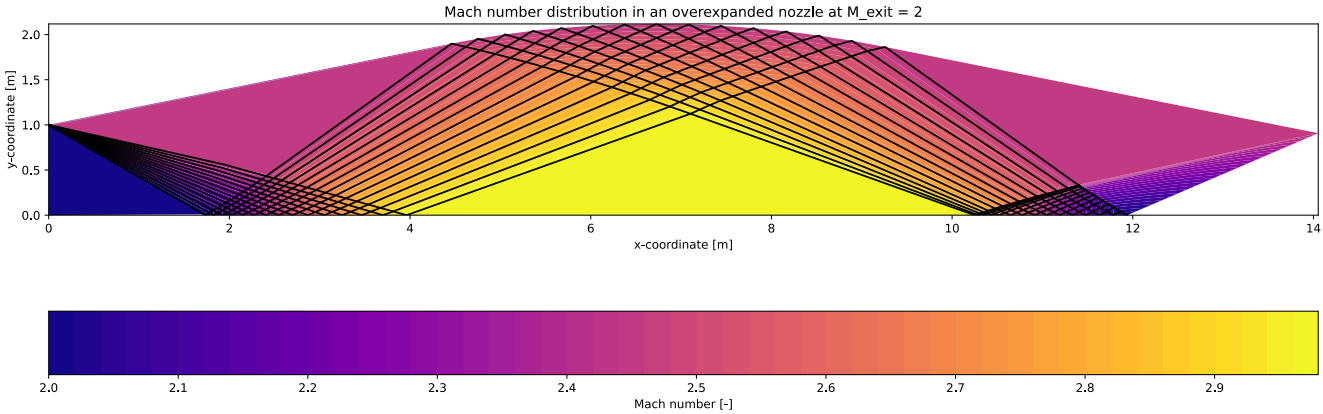
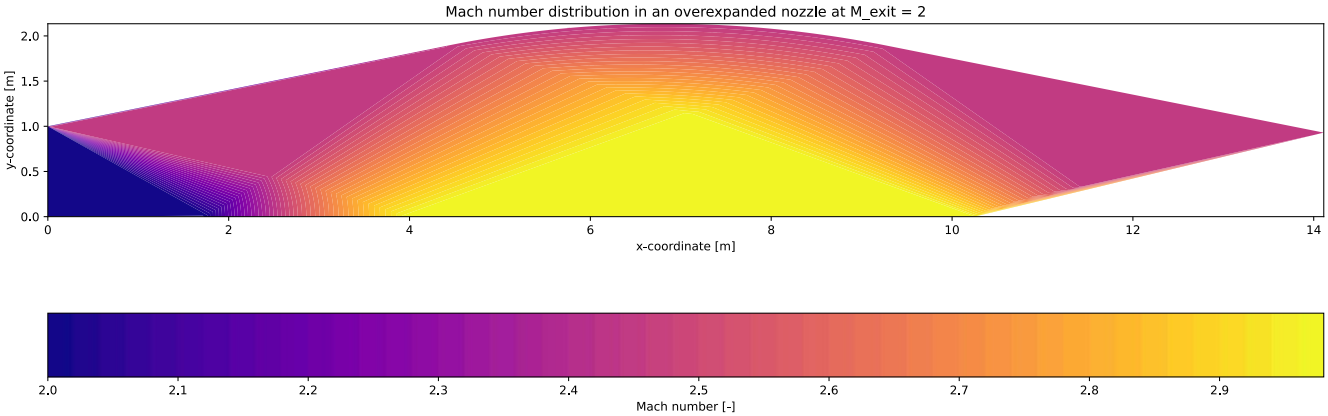
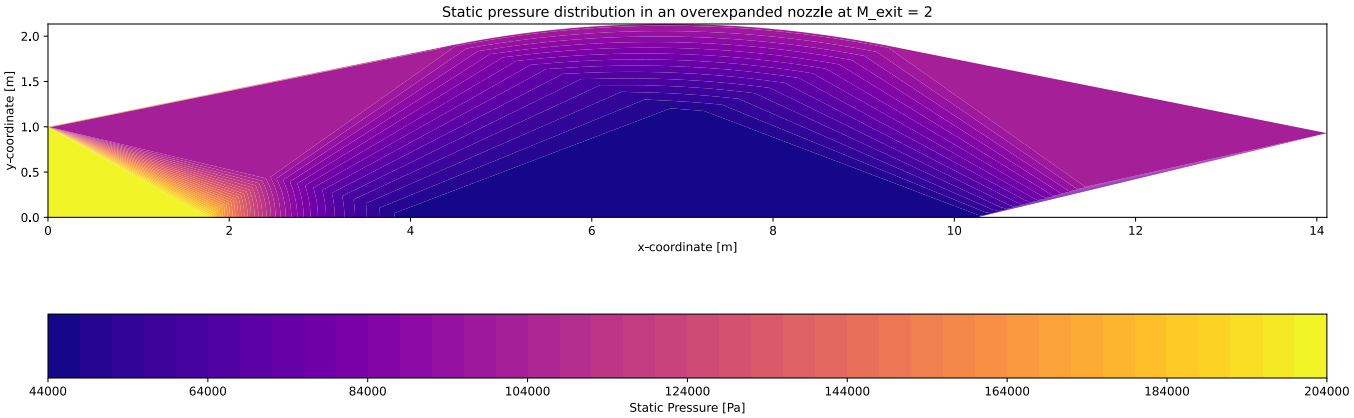
Images are zoom-able, white lines are an artefact of plotting



- When plotting all regions up *9* and including *11*, with 15 charatericstics visible, the lines can be seen to intersect at the border of *9* and *8*. This is where a shockwave will start forming. The values of *10* and *11* are also not usefull anymore therefor. These intersection seem to happen because the jet boundary starts to bend inwards again.

- The following figures were obtained with 150 characteristic lines.





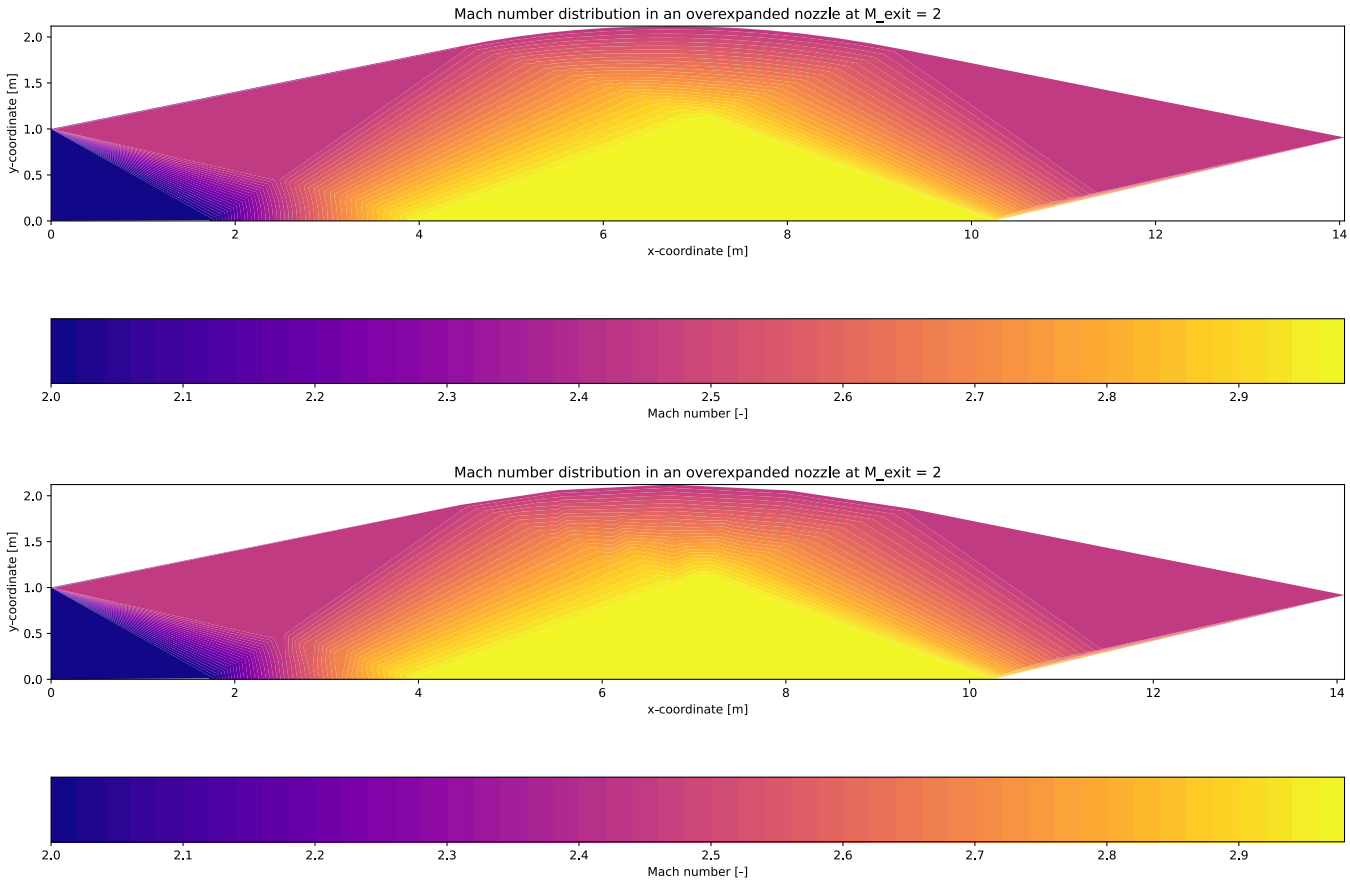
As expeted for an isentropic flow, the pressure is low where the Mach number is high. It is clearly visible that the mach number andn static pressure are constant

Images are zoom-able, white lines are an artefact of plotting

along the jet boundary, as prescribed by the boundary condition. These two can also be seen to be constant in the regions that are uniform. They then gradually change over the expansion fans to match the other regions.

The flow seems to accelerate in the center until it reaches the shock. There also seems to be a high pressure in the middle of the flow.

- In the following images are the mach number using 15 characteristics vs 5 characteristics respectively.

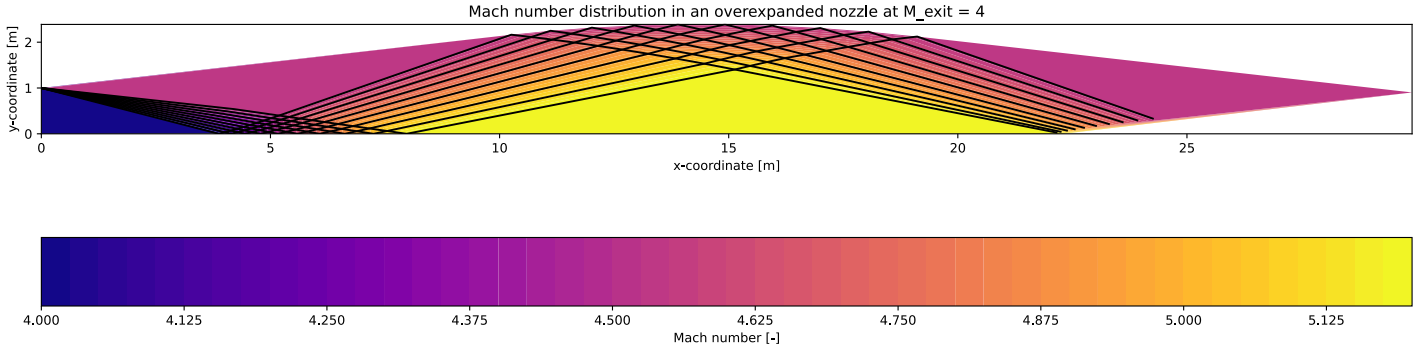


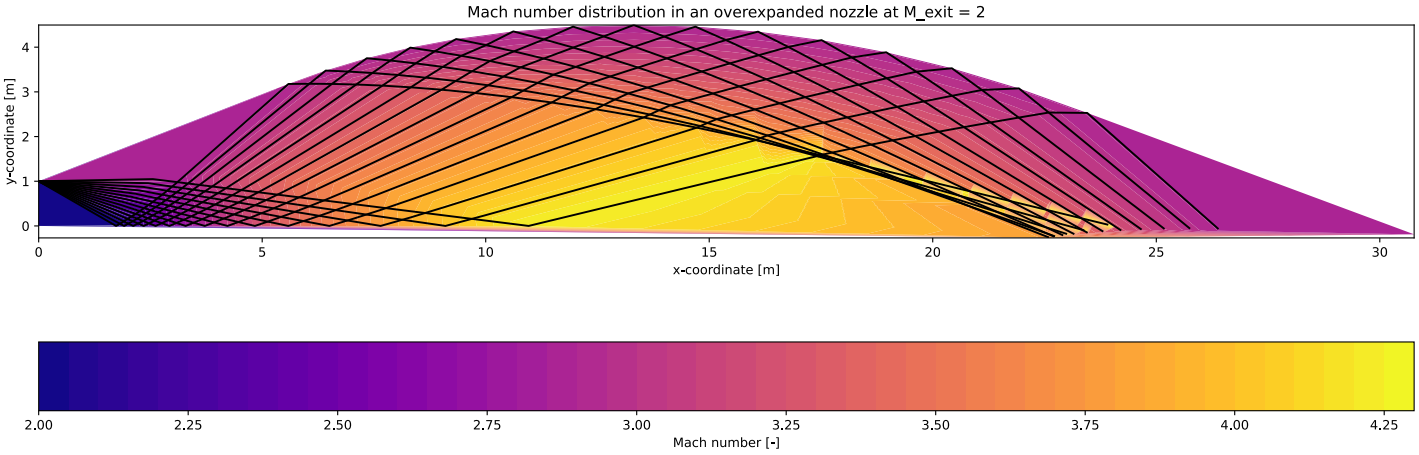
Due to the way it is plotted (using interpolating) there is little effect of the lower number of charateristics visible in the lower image. What is visible however is the jet boundary being more ‘blocky’ where it bends in region *7*. This is the result of

Images are zoom-able, white lines are an artefact of plotting

the method used; the values are exact but the locations are only approximate. In the non simple regions that is atleast.

- Doubling the exit Mach number or pressure gives the following results respectively.





Changing the Mach number seems to only really elongate the jet, wheras changing the pressure at the exit also increases the height of the jet significantly. This ofcourse is because it is even more overexpanded than it already was. This increase in curvature also pushes the shock forward (in relative terms that is).