We want to add an angle constraint loss on the controls in order to enforce that the angle between the first and second control points is approximately . Meaning:

For some .

Let’s choose MSE as the loss function to impose this:

Write the control vector Let’s rewrite our objective as s.t. we add the variable (that the LS solver finds) in the end:  
.  
  
We can easily write our original objective functions (MSE, smoothing) with respect to by just adding rows or columns of zeros (to zero out the effect of on the MSE, smoothing calculations).  
Let’s write our new constraint in matrix form with respect to :

After finding , we throw away at the end to keep .