TAM 554 – Homework #5 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

November 18, 2015

1. Consider the Mohr-Coulomb solid yield function and flow potential. Derive all the necessary quantities similar to our approach with the Prager-Drucker criteria in class. The Mohr- Coulomb is written as,



in terms of the principal stresses, and the two constants 

2. A simple form of the yield function is given as

 where ,  and  are constants. The equivalent stress is defined as F. Determine the constant  from the uniaxial yield condition.

Now, we introduce the flow potential which takes on a similar form,

. Derive an expression for the rate of volume change.