General Comments
This manuscript presents a new approach to modeling the flow of water within Rhizophora mangroves. The key improvements to the COAWST vegetation package are: (1) allowing the vertical varying projected area density (frontal area per unit plan area), (2) using the root and stem length-scales in the turbulence dissipation terms, (3) implementing the Rhizophora module which can calculate projected area density from easily obtainable field measurements. These improvements allow the field to move beyond the conventional cylinder assumption, and are generally applicable to all hydrodynamically rough environments which aren't well described by cylinders.

I like the approach of this paper. The changes the authors have made have increased the clarity, and strength of this paper.

Comment on Response 2.2

The runs that are labeled as increased bed roughness (z0=0.02) should be considered with care because the z0 value used in those runs are an order of magnitude less than the authors estimate of the actual (without numerical limitations) increased bed roughness (z0=0.22). I think some text in the manuscript describing z0=0.2 as the maximum amount of bed roughness that logarithmic drag can represent in the model due to numeric limitation would be good. The authors thoroughly explain the numerical limitation in the supplemental information, I believe a few words in the manuscript would make it very clear to readers that z0=0.02 isn't the authors estimate of the enhanced z0 value. Alternatively, I believe that the requirement in COAWST that z0 < zbottom, is only true when using a logarithmic drag law. I have never attempted this, but I think it would be possible to use the equation (R8) relating the manning coefficient and C_{bed,mean} to arrive at a drag coefficient that can be input to COAWST using a quadratic drag law, getting around the z0 < zbottom limitation. Either additional text detailing the numerical limitations of and enhanced z0 value or a quadratic drag law approach would be sufficient in addressing this.

Comments on Responses 2.3-2.8
I agree with the author's responses to comments 2.3-2.8.