

The topic of this article is numerical simulations of unsaturated soil, which is very interesting and attractive. The structure of this article is well organized and the language skills is good enough. However, there are a few comments for improving this article:

1. Introduction. In the framework of unsaturated soil, one of the most famous constitutive models (BBM) is missing. In addition, the authors should refer to these famous numerical tools in the simulation of unsaturated soils, such as Code_bright, Lagamine.

2. Section 2, equation (5). Why did the authors choose the Coulomb criterion since there are numerous criteria, such as Mohr-Coulomb etc.? Please explain a little bit in the manuscript.

3. Section 3.

3.1. We are not familiar with MatDEM, please give more information about this software. Why did the authors choose MatDEM, is there any advantages of this software over other numerical tools? Is MatDEM an open access software? Have the authors made any numerical implementation in this article, or just use the software as a user?

3.2. It is not good to use 'etc' in scientific articles. Please check in line 144.

3.3. Line 193. Is the tetrahedral element a linear element type? Why did the authors choose this type of element? Is there any numerical problem with element-dependency and mesh-dependency?

3.4. Line 245. Please explain more about the experimental tests.

4. Please clarify the highlights of this article.