

Elastoplastic-viscoplastic constitutive formulations are presented in the paper. Generally, such coupled analysis is required if rate-independent (instantaneous) analysis needs to be augmented with time-dependent yielding analysis such as the effect of creep. The concept presented in the paper is well documented in standard literature (both rate-independent and time-dependent). Coupling of these two methods are also presented in several literatures as also mentioned by the authors. In that sense, the paper does not provide any new information.

However, a coupling integration algorithm is presented in UPF platform of ANSYS which may have some interest to the readers of this journal. It is encouraged that the authors focus their paper in that direction rather than elaborating the concept already available in the standard books and literature. While revising the paper, authors may highlight the following:

- i) Dilation of rock materials is neglected in the present study. Dep in elasto-plastic analysis will be unsymmetrical in non-associative flow. Please make comments on symmetrisation techniques or comment whether one needs a non-symmetrical solver. Authors may refer to the following symmetrisation papers.

Pande et al., 1986, "Symmetric tangential stiffness formulation for non-associative plasticity", *Compu Geotech*, 2(2) 89-99

Deb et al., 2013, "Generalized symmetric formulation of tangential stiffness for nonassociative plasticity", *J. of Engg. Mech*, Vol 139, issue 2.

- ii) Express momentum balance equation in static condition and make comments on the increment of external load, especially whether it will be time dependent or not. Generally, for elasto-plastic analysis Δt is a pseudo-parameter, however, it is an important parameter for visco-plasticity. Will the stress corrections in elasto-plastic analysis now be depended on Δt ?
- iii) Authors have assumed that increment of strain($\Delta \epsilon$) will be estimated first and stress will be updated before elasto-plastic analysis starts. One would think it may happen in the reverse way.
- iv) Define c_i , c_p , c_r in equation 13.
- v) Elaborate on the UPF code in ANSYS for the benefit of the readers. This is probably the novelty of this paper. Authors may schematically present the code block in Fortran. Title of the paper may be changed accordingly.
- vi) Is superscript p valid in equation given in line 214?
- vii) The example problem is solved considering associative flow. Analyze the same example considering non-associative flow rule.
- viii) Line 318: ratio not ration.

The paper needs major revision as mentioned above.