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Interactive comment on "Two-dimensional numerical investigations on the termination of bilinear flow in fractures" *by* A. E. Ortiz R. et al.

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"The paper by Ortiz et al. is a well-written paper that discusses the end time of the bilinear flow in fractures which has an important practical significance in the long term forecast, for exploitation of liquid or gaseous resources. By numerical simulations using a two dimensional finite element model and non-dimensional formulation, the authors analyse the evolution of the well pressure and the evolution of the pressure along the fracture and in the matrix, and adopt the transition criterion and the reflection criterion to sum up the law of the end of the bilinear flow. So I think that is a very valuable reference article. However, there are some minor issues with the current version which the authors may need to modify. I recommend amended as follows: "

1.) "Section 2 should further explain the background formulas and detail the derivation

process. "

reply: We will modify equations 1 and 2 by explicitly using the parameters k_m, s_m, eta_f, T_F, and S_F and better explain the meaning of the different terms of the equations in the text. Corresponding diffusivities will then be introduced and explained in text.

2.) "alpha_b of Section 3.2 is known from Fig. 5(a) that when pN= 0.01 and 0.05, alpha_b is a constant for a certain time interval, not alpha_b = 3 and 2 , respectively. And I suggest that the value of alpha_b need further introduction. "

reply: When describing Eq. 12 (obtained from Fig. 4) in the text we will clarify that for certain time intervals alpha_b is "about" 3 and 2 for p_N=0.01 and 0.05, respectively. Moreover in Fig. 5a we will add that the constant alpha_b presented in Eq. 12 calculates as x_iD/(T_D tauˆ1/4) for a certain time interval.

3.) "According to Eq. (13) x_i(t)= a_B (D_b t)ˆ1/4, x_iF(t)= a_b T_D tauˆ1/4 x_F is introduced, not Eq. (12). "

reply: We will emphasize that Eq. 12 uses the non dimensional variable x_iD (=x_i/x_F) and thus is equivalent to the above equation.

4.) "The interpretation of the intermittent acceleration needs a picture in line 20 of P404."

reply: We will prepare a sketch illustrating the process of reflection.

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