# Discussion on P&G 12.7, 115-121 (2001), i.e. about stick-slip in trikaxial test…

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**Abstract :**

Testimony #1 was produced to "la Cour administrative d'Appel" (CAA) in Paris; so the following correspondence is no more private but open to anybody and can be used by anybody refereeing to it.

**Pacs # :** 5.40 ; 45.70 ; 62.20 ; 83.70.Fn

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This paper was presented for publication at Int. J. Geomech. For publication. It was rejected by the Journal because it was not understandable probably for soil mechanics engineers, with too many theoretical arguments and concepts. This works led to the PhD dissertation of F. Adjemian.
I did not find any scientific argument leading to its rejection. We make the change needed to correct the errors.
So, I believe this paper is correct. So it was published by *Poudres & Grains*.

In the following, the discussions generated by the reviewing of Int. J. Geomech. It is free for publication due to the presentation to the Court (CAA) .

We see now how private correspondence become public one. I believe that the argument of private correspondence should be denied as soon as the author wants to publish its work on internet…
This should be a new rule for editors.

## References:

[1] F. Adjemian & P. Evesque, Experimental stick-slip behaviour in triaxial test on granular matter, P&G 11.4,58-59 (2000), *Poudres & Grains* **12** (7), 115-121 (octobre 2001)
[2] http://defense-pierre-evesque.over-blog.com/; [3bis] 2ème réponse au CNRS (27/4/2016) via la Cour Administrative d'Appel de Paris (http://www.poudres-et-grains.eu/datas/suite_affaire_2/3rr-mem-22.4.16-CAA.pdf ) which makes public the private peer-reviewing correspondence.
[3] http://poudres-et-grains.eu/datas/temoignages/Temoig-1_editionsCL-23-6-11.pdf , pp. 118-123

**Article soumis à Int. J. of Geomechanics par Evesque et Adjémian et rejeté en Février 2002**

Etant donné les critiques, nous avons préféré édité cet article dans Poudres & Grains. (Poudres & Grains **12** (7), 115-121 (octobre 2001))

Ce travail a donné lieu à la thèse de F. Adjémian,

à une partie de F. Adjémian ; Eur. Phys. J. **E 9**, 253-259 (2002), "*Stress fluctuations and macroscopic stick-slip in granular materials*" , P. Evesque,

à F. Adjemeian & P. Evesque , Different regimes of stick-slip in granular matter : from quasi periodicity to randomnessIn Quasistatic deformations of particulate materials, (K. Bagi ed., publishing company of BUTE, Budapest, 2003), pp. 5-13; proceedings of the QuaDPM'03, Budapest Hungary, 22-25 August 2003, pp 5-13;

F. Adjemeian, P. Evesque & X. Jia, Acoustic speckle and diffusion as a probe of contact distribution ;In Quasistatic deformations of particulate materials, (K. Bagi ed., publishing company of BUTE, Budapest, 2003), pp. 15; proceedings of the QuaDPM'03, Budapest Hungary, 22-25 August 2003, pp. 15; ISBN 963 420 748 0

F. Adjémian & P. Evesque , Experimental study of stick-slip behaviour, International Journal for Numerical and Analytical methods in geomechanics [Int. J. Numer. Anal. Meth. Geomech.] 28, 501-530 (2004) 10:1002/nag350

F. Adjémian & P. Evesque Erratum on "Stress fluctuations in granular matter: Normal vs. seismic regimes in uniaxial compression test" (P&G 13,4 (2002); Poudres & Grains 14 (1), pp. 4-7, (2004)

à un artricle dans Powders & Grains 2005 : F. Adjémian, P. Evesque & X. Jia; Ultrasonic experiment coupled with triaxial test for micro-seismicity detection in granular media ; Powders & Grains 2005, Stuttgart, July 18-22, 2005, in Powders & Grains 2005, (Garcia-Rojo, Herrmann, McNamara ed., Balkema 2005), pp. 281-285

et à une collaboration avec X. Jia.

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February 26, 2002

Dr. Pierre Evesque
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FRANCE

Dear Dr. Evesque:

Enclosed are two reviews and one marked copy on your paper entitled, *Study of Stick-Slip Behaviour*. One reviewer suggests that the paper be resubmitted after detailed revision, while the other recommends rejection. Under the circumstance, in the present form, the paper is not recommended for publication in this journal

However, if you wish to consider revising the paper as per the reviewers' suggestions, I would be glad to send it for another review. In that case, please attend to the following items as marked:

☑ Revise the manuscript as per enclosed reviews and send me (three)/four copies of the revised version. Indicate in the margins of one of the copies locations where the review comments are complied with.

☐ Submit as Short Communication.

☑ Make any other appropriate changes in the manuscript.

☑ Attend to enclosed check list.

☐ Originals of _____text and _____figures are enclosed.

☑ Marked (copy)/copies are enclosed. (1)

With best wishes.

Sincerely yours,

C. S. Desai

Enclosures

Review of **"Study of stick-slip behaviour"** by Evesque and Adjemian

The authors present an experimental study of the behaviour of a limited number of quartz particles and find that the behaviour is characterized by what they call a stick-slip phenomenon. Although quartz particles are used, this stick-slip phenomenon is apparently not the one usually associated with quartz. This, however, is not clear from the presentation. But it appears that the phenomenon is significant when a limited number of particles are tested, and it disappears (?) when the number of particles is sufficiently large. Unfortunately, the presentation is so flawed that it is difficult to follow it and to judge the quality of the contents. The presentation is rather cursory, wordy, and not concise (language is spoken, structure of sentences and sentences themselves appear to be jotted down as the words come to mind), the experimental technique is not high quality. The overall impression is that of a careless research project and presentation. It is recommended to decline the contribution. The following comments may be considered:

1) p. 4, middle: Detailed explanation of well-known items in soil mechanics are given, but explanations of essential experimental techniques are omitted. The authors should mention and explain the continuous recording of data, since continuous curves are necessary and in fact recorded. Were lubricated ends on the triaxial specimens used? Apparently the volume change was not measured, even though this is easily done, also for dry samples. The area correction is therefore not made in the first place, and the consequences of different types of corrections are explained in a 2-page appendix. Thus, the quality of the experimentation is questionable, and using 2 pages in the journal to explore the consequences of different assumptions seems extravagant and unnecessary, when this is standard soil mechanics techniques today.

2) p. 4, 6 lines from bottom: H = D in some experiments. Were lubricated ends used? Or were the specimens barrel-shaped at the end of the experiments? Quality of data?

3) Table 1: It is difficult to tell how reliable the friction angles are since the volume change was not measured and correct area corrections, especially at large strains, have not been made.

4) p. 5, 7 lines from bottom: " In soil mechanics, the ratio $\sigma_1'/\sigma_3'$...." The statement in this sentence is not correct in general. It depends on whether the samples are drained or undrained. The tendency is correct for undrained tests on dense sand, but not for loose samples, and not for drained tests. Here we are dealing with drained tests, so the statement does not semm to be appropriate.

5) p. 5, 5 lines from bottom: "So the limit ratio at plateau can be interpreted as solid friction." This is not correct. This plateau in undrained tests on this diagram contains effects of a tendency for dilation, and it contains effects of remolding at constant volume. This does not represent solid friction.

6) p. 5, line 7 from bottom: Switch to effective stresses - why? Are we talking about undrained tests? Authors do not appear to be aware of the different behaviours in drained and undrained tests, and they liberally use what they can use for comparison with their own results.

those derived in the current paper. For example the characteristic volume element will turn out to be quite a bit smaller than proposed.

3. The authors make no mention of the effect of machine stiffness on their observed results. In dynamic micro-failure events, the energy stored in the system (loading machine plus specimen) plays a key role in driving the dynamics of the deformation. For example in a compliant system, fractures or frictional slips will have a completely different character than those produced by the same material in a very stiff loading machine. The result is that the reported $\delta q$ values for frictional slips in the tests are as much a function of the machine stiffness as the material. The authors could demonstrate the machine stiffness effect by conducting similar tests where a spring of known stiffness is inserted between the specimen and the loading ram. By using springs of different stiffnesses, the machine effect can be estimated and the effect on the results accounted for.

**Editorial Comments:**

1. The authors include a lot of stress-strain plots for comparison to evaluate the effect of certain variables. It would be very helpful if all the plots were on the same scale. Different scales make it very difficult for the reader to grasp the comparison.

2. The manuscript, as a whole is too long, a concerted effort should be made to make it more concise.

3. The manuscript would benefit from a detailed editing. There are several places where concepts are lost in the translation. Several of the Figures also need editing to make the notation consistent throughout.

4. Figure 8a is the wrong plot (should be same plot as Figure 7a).

**Summary:**

The work reported in this paper has potential but also has flaws that need to be corrected before it is ready for publishing. I recommend, therefore, that the authors consider the comments above and re-submit the article at a later date.

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7) p. 6: n is used as a counter here, while it represents the porosity on p. 5, line 3.

8) p. 7, line 4: v is velocity here, while it represents the volume in line 2 of section II.

9) p. 7, line 10 and 11: Cap V used for velocity here (see previous comment).

10) p. 7, line 10: Is m the mass of the block, not the slider?

11) Figs. 4c and 5a: Indicate rates in the 4th sections of the tests.

12) Figs. 5a and 5b: "For instance similar $\Delta q$ amplitudes are obtained for the three $d\varepsilon_1/dt = V/H$ strain rates in Figs. 5a and 5b." How is this seen? For the same strain rate? The vertical scales are not the same in Figs. 5a and 5b - difficult to judge.

13) Figs. 6a, 6c, and 6e: Comparisons are difficult, because none of the coordinate axes are the same. How can the reader follow the arguments, when the points being made are extremely difficult to observe on the figures?

14) p. 8, second paragraph in section III.1.2: "In next part..." This is not understood at all.

15) p. 8, line 6 from bottom: V>0.18 mm/mn should be 0.18 mm/min.

16) p. 8, near middle: Piston speed is given in $s^{-1}$, whereas velocities are given in the figures in mm/min. The sample heights play a role in the comparisons of these deformation rates and strain rates. How can the reader get anything out of this presentation?

17) Figs. 4, 5, 6,: Comparisons of velocities are made in mm/min, while the sample height changes. Should results be compared in terms of deformation rates or in terms of strain rates? Are these test data actually comparable? They appear to correspond to different strain rates. The authors need to explain the data in much more detail and make the comparisons before presentation of the essentially raw data to the reader.

The contents of this paper may be of interest after the data have been thoroughly analysed (!), but it is not the readers job to make the analyses.

18) Fig. 7: Again, the reader is being asked to observe the behaviour in 6 diagrams, none of which have comparable scales on the ordinates or the abscissas. - And the results correspond to different sample heights, while the deformation rates are given in mm/min, i.e. different strain rates!

At this point it was clear that this contribution would be declined, and the remainder of the paper was not reviewed.