

We thank very much both reviewers for their comments and useful suggestions. The changes done in the manuscript are reported after each suggestion. In addition, and following remarks sent us by Thomas Udem, we have :

- completed legends of figures 3 and 4 to be more explicit about the signals which are shown,
- add the sentence "Here the quenching field ..." in the sixth paragraph of part "Wavelength measurements ..." for the same purpose,
- and removed the second sentence of the second paragraph of part "From 2S-nS/nD ...", since the fact that our signal was not affected by any quantum interference effect could be questionable.

COMMENTS FOR AUTHOR:

Reviewer #1: The paper is a very useful summary of the remarkable work on hydrogen carried out in Paris since the 1980's. It emphasises the interplay between the group at Laboratoire Kastler Brossel and that led by Ted Hänsch in Garching. My main comment would be that the English needs to be corrected in quite a few places. A list of suggestions follows, but it would be helpful for an editor to check the paper once it has been revised:

Page 2:

Line 23 insert "(FB and LJ)" after we; replace "this" by "the"
(done)

Line 27 replace "Himself" by "He himself"
(done)

Line 29 move "very quickly" to the end of the sentence
(done)

Line 46 replace "deviates" by "bends"; delete "then allows to"; replace "make" by "makes"
(done, but keeping "then")

Line 48 replace "delimits" by "creates"
(done)

Page 3:

Line 42 replace "good" by "correct"
(done)

Page 4:

Line 47 replace "distant from" by "separated by"
(done)

Page 5:

Line 31 replace "to" by "of being"
(done)

Line 34: insert "was" before much; insert "but" before needs
(done)

Line 42: replace "in" by "at"
(done)

Line 53 replace "domain" by "field"
(done)

Line 54 insert "it" after "pursue"

(done)

Page 6:

Line 19 replace "purpose" by "study"

(not done ; we followed the suggestion of Reviewer #2)

Line 20/21 replace "has been" by "was"

(done)

Line 46 replace "turned into" by "replaced by"

(not done : the laser was not replaced but modified)

Page 8

Line 17/18 "involved levels" should read "levels involved"

(done)

Line 22/23 replace "being in" by "with"

(done)

Line 29 replace "the opportunity of" by "an opportunity for"

(done)

Line 36/37 replace "In" by "For"; insert "stages" after doubling

(done)

Page 9

Line 43/44 replace "a tentative" by "tentative work"

(done)

Line 53 delete "presently"

(done)

Line 55 replace "During" by "At"; replace "dealings" by "effort"

(done)

Page 10

Top line of page: replace "us" by "up"

(done)

Line 11 after "accuracy of" insert "a"

(done)

Line 28/29 "realize" should be realized"

(done)

Page 11

Line 15/16 replace "which" by "whose"

(done)

Line 49 replace "attributed" by "awarded"

(done)

Line 54 inset "one" after "allowing"

(done)

Page 12

Line 11 replace "by" with "in"

(done)

Line 12 replace "the 2S-nS/nD and focus on the 1S-3S one." by "2S-nS/nD and focus on 1S-3S.

(done)

Line 52 Replace "It" by "This"

(done)

Page 13 line 53 replace "has" by "had"

(done)

Page 14 bottom line replace "is" by "are"

(done)

Page 15

Line 39 replace "The Paris's people" by "The Paris group" or "Members of the Paris group"

(done)

Page 16

Line 14/15 replace "on" by "in"

(done, twice)

Line 20 delete "tentative of"

(done)

Line 24/25 delete "the one of"

(done)

Reviewer #2: This paper, intended for a special issue celebrating the scientific life of Ted Hansch, tells the story of three decades of experimental work on hydrogen performed in the authors' laboratory in Paris. I found it fascinating reading because it includes details that are traditionally left out of scientific papers, such as why a particular path was chosen. I think the community will also find this written history of the field very useful. To the best of my knowledge it is accurate. The paper will make a valuable contribution to the special issue and so I recommend that it be published.

I have only minor suggested corrections:

Page 1 Line 45 began, not begun

(done)

Line 49 work, not works

(done)

Page 2 Line 26 He, not Himself

(done, but according to the suggestion of Reviewer #1)

Line 49 shield, not prevent

(done)

Line 50 delete "region"

(done)

Page 3 Line 40 whose, not which

(done)

Line 42 correct, not good

(done)

Page 6 Line 19 For, not In

(done)

Line 20 replace "has been" with "was"

(done)

Line 35 delete "back"

(done)

Page 8 Line 31 was, not has

(done)

Page 9 Line 9 Ref. [29] also notes the good agreement of the Paris measurement with the comparison of hydrogen transitions in PRL 75, 2470 (1995). It would be appropriate to reference that work.

(done ; the reference was indeed missing and has been added)

(in the next sentence, "two groups" has been replaced by "three groups")

Line 44 there seems to be a word missing after "tentative"

(done following the suggestion of Reviewer #1)

Page 12 Line 24 "not", not "no"

(the sentence has been removed)

Page 14, Line 43 scattering, not diffusion

(done)

Line 56 delete the "way" after r_p

(done)

Page 15 Line 9 scattering, not diffusion

(done)

Line 39 Paris, not Paris's

(done)

Page 16 Line 46 insert "the" before "hydrogen"

(done)