

Representation of women in History of sciences... and of LMD

Camille Risi, equality-diversity group

23 octobre 2023

Initial motivation: towards a more inclusive web site

- ▶ A more inclusive web site: e.g. “*étudiants*” -> “*étudiantes et étudiants*”, “*chercheurs*” -> “*chercheuses et chercheurs*”.
- ▶ Why inclusive writing is important? -> Impacts mental representations, fights stereotypes, improve the performance of women (e.g. *Isabelle Regnier et al*)

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- ▶ Web page on the LMD History:



Historique du LMD

« L'année 1988 / L'année 1988 est l'année de toutes les révolutions... et les sciences du climat n'échappent pas à la leur. En 1988, le laboratoire de Métréologie Dynamique est créé par le fusion du laboratoire de Physique de la Basse Atmosphère, dirigé par Paul Queney, et d'un groupe constitué par Pierre Mariel, à l'époque jeune professeur-physicien théoricien qui ne connaît que peu la physique de l'atmosphère. »

C'est une révolution de paradigme scientifique : la météorologie fait sa transition de science naturelle, descriptive, à une science « dure », basée sur la physique et les mathématiques. La météorologie dynamique c'est la science de l'atmosphère en mouvement. Elle repose sur trois piliers qui constituent depuis 50 ans l'ADN du laboratoire : la mesure des mouvements atmosphériques, la simulation numérique des écoulements planétaires, et l'analyse de données.

trois initiatives d'excellence (IDEX) dont dépend le LMD, Paris Sciences Lettres, Sorbonne Université et Paris Saclay, dont le but est de créer des ensembles pluridisciplinaires d'enseignement supérieur et de recherche de rang mondial.

A l'origine, autour de Paul Queney et Pierre Mariel, l'objectif est donc d'intégrer les sciences de la météorologie et du climat dans la science « dure ». Cela implique de développer la modélisation numérique et d'élaborer et conduire des campagnes de mesure. Cette démarche est entreprise dans le cadre du programme ECOS, associant les agences spatiales françaises (CNES) et américaines (NASA). Une flotte de ballonsondes est lâchée de septembre 1976 à juin 1977 dans le courant-jet de l'hémisphère sud (479 ballons à 7 000 mètres d'altitude), où elle observe pendant plusieurs jours, suivie par un satellite météorologique. Dans ce contexte, il revient à Robert Sadourny de développer au sein du laboratoire nouvellement créé la modélisation numérique, à Olivier Talagrand l'expertise en



Pierre Mariel (à gauche), Jacques Blumont (à gauche) et Jean-Pierre Chouza (au centre) en 1982, dans le cadre de la mission scientifique du CNES.

- ▶ 12 names of men, only 1 name of a women
- ▶ women not even as a subject: “*Robert Sadourny ... un des pionniers... créé... avec Katia Laval*”
- ▶ emphasis on “*Pères fondateurs*” (founding fathers)
- ▶ “*étudiants et chercheurs*”
- ▶ pictures: only men!

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- ▶ When I raised the issue, reaction by e-mail of a scientist at LMD:

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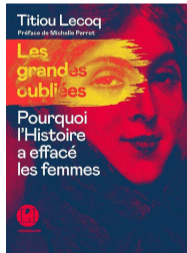
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- ▶ Have women been erased from History? Consciously or not?



(book advised by Jean-Yves)

- ▶ Special issue on LMD History in preparation: what can we do to represent women than on the web page?
- ▶ I contacted science historians: Denis Guthleben (involved in the special issue), Valérie Burgos (expert in women in science History)
- ▶ Seminar Valérie Jan 17 + debate in réunion climat Jan 29
- ▶ This presentation is a summary of what I understand from my exchanges with them and literature review (*Burgos et al 2021...*)

Les femmes, quand on les cherche, on les trouve

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- ▶ We do find women in LMD history:
 - ▶ discussions with retired women from LMD: women have always been around and played a pivotal role in LMD History
 - ▶ Behind Joël, Joëlle! (Ovarlez) -> from 1/13 to 2/13 of women names
 - ▶ Modify sentence formulation: “*Robert Sadourny ... un des pionniers... créé... avec Katia Laval*” -> “*Robert Sadourny et Katia Laval deviennent parmi les pionnières et pionniers ...*”

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 - ▶ Still much work to do enhance the visibility of women in texts and pictures of the web site!

Mechanisms by which women are erased from History

- ▶ Unconscious biases, political choices behind selection of archives to be conserved

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- ▶ Until the 20th century, women were excluded from science institutions -> look for:
 - ▶ mentors: e.g. Jérôme Lalande (astronomer (1732-1807) who employed many women as calculators and militated for including women in science)
 - ▶ apparently non-scientific domains: e.g. cosmetics -> chemistry by Marie Meurdrac (1610-1680)

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- ▶ digg deeper than “Great Men” and “Founding Fathers”, shed more light on the diversity of workers in research, account for the complexity of research process (parallel between gender and social dominations)

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- ▶ So, what do we want to do?