



Negative results — the missing piece of scientific publishing

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The current ‘publish or perish’ culture of our scientific system leads to a publication bias towards positive results (Curry, 2015). However, experimental failure in geosciences is the norm. Paradoxically, we typically do not share negative findings — defined as experiments giving results that do not confirm an accepted hypothesis or previous results, despite sound and careful experimental design, planning and execution — not even in informal settings. In the past, many great philosophers, including Popper (1963) and Chalmers (1973), have emphasized that science can only advance by learning from mistakes. Moreover, recent literature in various fields state the many benefits and values of publishing negative results and call upon the scientific community to nurture their dissemination (e.g., Andréassian, et al., 2010; Schooler, 2011; Matosin et al., 2014; Granqvist, 2015; Boorman, et al., 2015; PLOS collections; 2015, 2017; Nature Editorial, 2017). However, despite the various calls to report negative results, they are still a missing piece in many fields of our current publication system, including the field of hydrological research. We believe that the reason for that is a lack of incentive. Currently, reporting on negative results is neither encouraged nor rewarded. In our presentation we aim to stimulate a discussion on cultural barriers to change the way in which the scientific community including individual researchers, scientific societies, funding agencies and publishers in the field of hydrology value negative results. Moreover, we propose ways forward on how to encourage our scientific community to promote and acknowledge the concept of reporting on negative results more actively which will ultimately advance science.

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