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**Christian Berg\*** ([berg@math.ku.dk](mailto:berg@math.ku.dk)), Department of Mathematical Sciences, Universitetsparken 5, DK-2100 Copenhagen, Denmark. *On an iteration leading to a  $q$ -analogue of the Digamma function.*

We show that the  $q$ -Digamma function  $\psi_q$  for  $0 < q < 1$  appears in an iteration studied by Berg and Durán. This is connected with the determination of the probability measure  $\nu_q$  on the unit interval with moments  $1/\sum_{k=1}^{n+1}(1-q)/(1-q^k)$ , which are  $q$ -analogues of the reciprocals of the harmonic numbers. The Mellin transform of the measure  $\nu_q$  can be expressed in terms of the  $q$ -Digamma function. It is shown that  $\nu_q$  has a continuous density on  $]0, 1]$ , which is piecewise  $C^\infty$  with kinks at the powers of  $q$ . The talk is based on a joint manuscript with Helle B. Petersen posted in ArXiv:1111.0250. (Received August 28, 2012)