

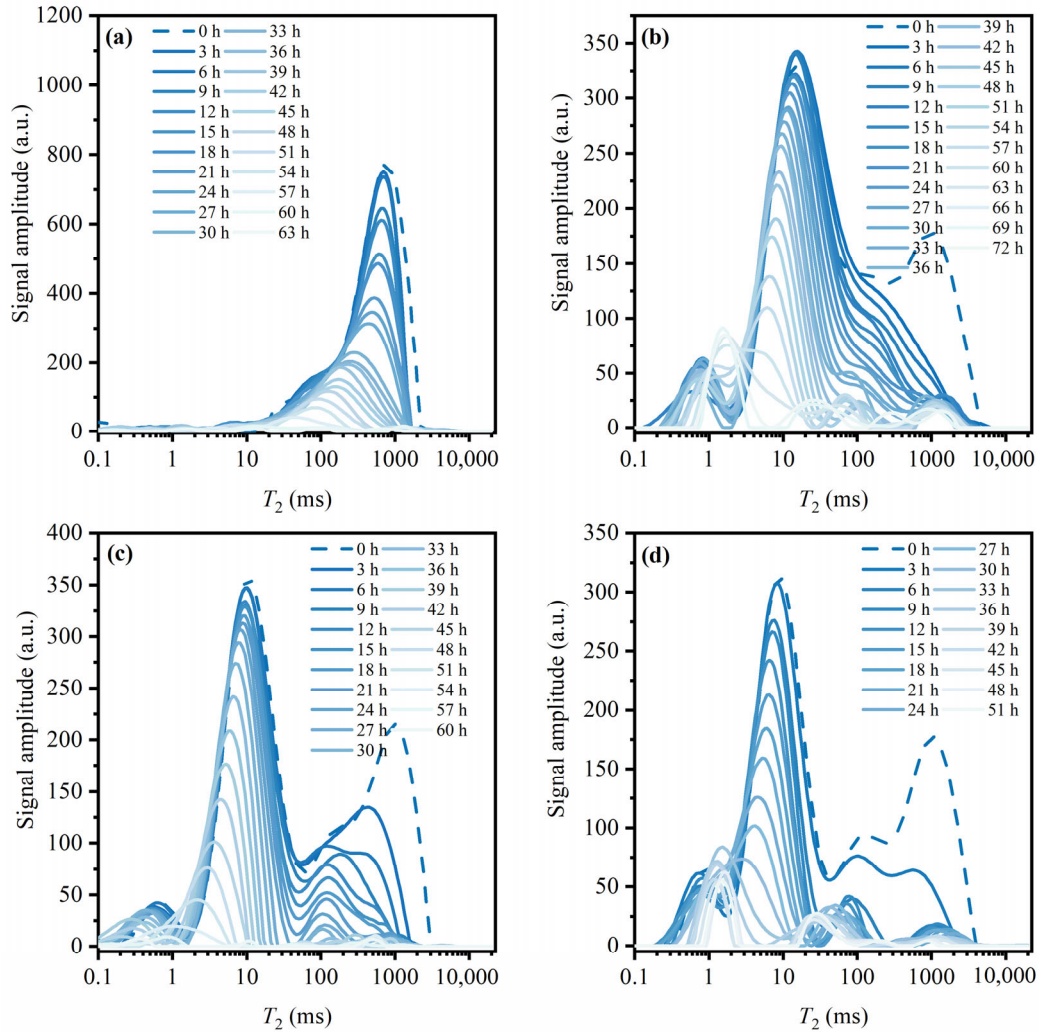
# Effects of Clay Content on Non-Linear Seepage Behaviors in the Sand–Clay Porous Media Based on Low-Field Nuclear Magnetic Resonance

Yu Yin <sup>1</sup>, Ziteng Cui <sup>2</sup>, Xiao Zhang <sup>2</sup>, Jian Song <sup>1</sup>, Xueyi Zhang <sup>1,\*</sup>, Yongqiang Chen <sup>1</sup> and Zhi Dou <sup>1,\*</sup>

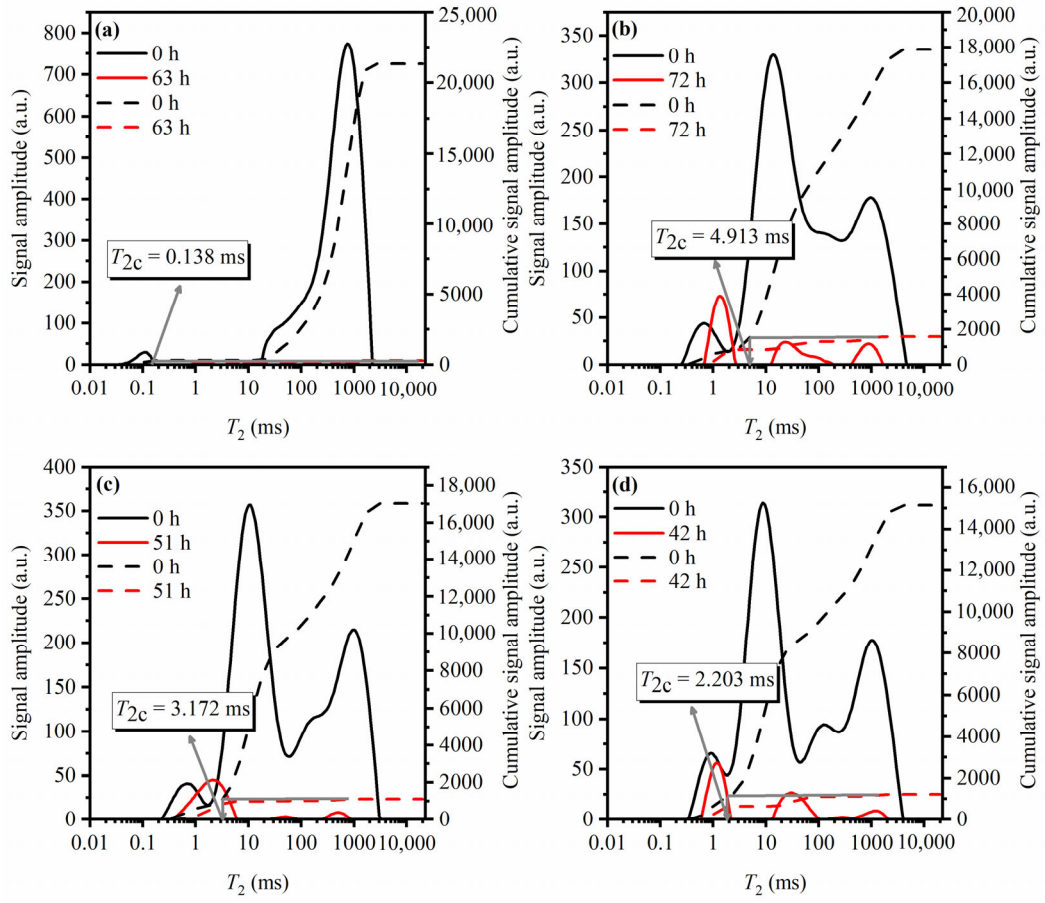
<sup>1</sup> School of Earth Science and Engineering, Hohai University, Nanjing 210098, China; 211309080040@hhu.edu.cn (Y.Y.); jsong@hhu.edu.cn (J.S.); yqchan1949@hhu.edu.cn (Y.C.)

<sup>2</sup> China Water Investment Co., LTD., Beijing 100053, China; czthhu@163.com (Z.C.); seardancer@hotmail.com (X.Z.)

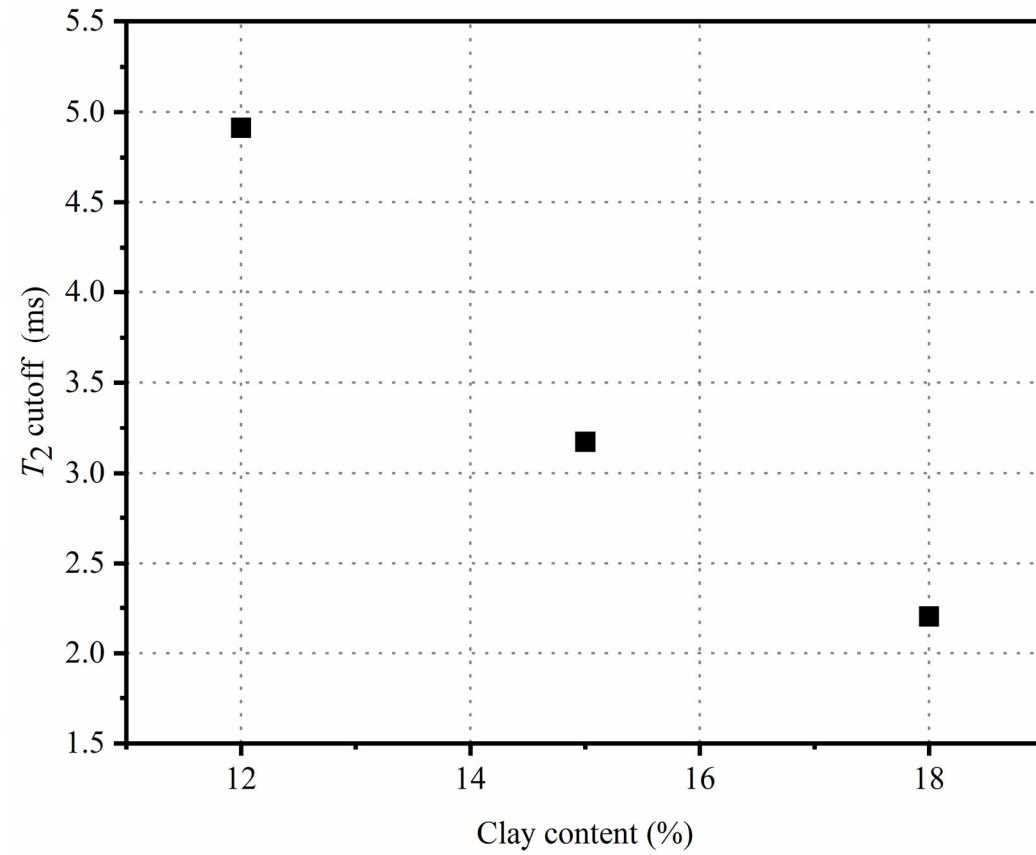
\* Correspondence: zxyi@hhu.edu.cn (X.Z.); douz@hhu.edu.cn (Z.D.)



**Figure. S 1.**  $T_2$  distribution curve of soil samples (a)  $C_0$ , (b)  $C_{12}$ , (c)  $C_{15}$  and (d)  $C_{18}$  with drying time.



**Figure. S 2.**  $T_2$  cutoff values of soil samples (a)  $C_0$ , (b)  $C_{12}$ , (c)  $C_{15}$  and (d)  $C_{18}$ , the black and red dashed lines respectively indicate the cumulative signal amplitude under saturated soil sample and after drying for a certain time, while the black and red solid lines respectively indicate the  $T_2$  signal amplitude under saturated soil sample and after drying for a certain time.



**Figure. S 3.**Relationship curve between  $T_2$  cutoff value and clay content

As the drying process commences, the  $T_2$  distribution curve for all soil samples collectively shifts to the left over time, and the peak representing free water eventually disappears, leaving only the main peak with relaxation time less than 10 ms. This suggests that the free water in the soil samples has evaporated and dissipated. The main peak area then represents the content of bound water in the soil sample.