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CANTOR'S INTERSECTION THEOREM IN THE SETTING OF $\mathcal{F}$-METRIC SPACES

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Abstract. This paper deals with an open problem posed by Jleli and Samet in [1, M. Jleli and B. Samet, On a new generalization of metric spaces, J. Fixed Point Theory Appl, 20(3) 2018]. In [1, Remark 5.1], they asked whether the Cantor's intersection theorem can be extended to $\mathcal{F}$-metric spaces or not. In this manuscript, we give an affirmative answer to this open question. Additionally, keeping in mind the fact that totally boundedness is not a topological property, in the setting of $\mathcal{F}$-metric spaces are equivalent to that of usual metric spaces.
Key Words and Phrases: $\mathcal{F}$-metric space, metrizability, Cantor's intersection theorem.
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