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Iron availability during the Permian-Triassic ocean anoxia

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Ocean anoxia is a key kill mechanism of the end-Permian mass extinction. The massive burial of framboid pyrite during the long-lasting anoxia led to the hypothesis that the Permian-Triassic ocean was depleted in iron. This resulted in ion limitation in the surface ocean, acting as a negative feedback on the exit from the OAE. Here, we evaluate this hypothesis and suggest that anoxic water bodies probably promoted the lateral Fe-shuttle. Iron availability in the open water might be higher than in the pre-crisis interval. This is supported by Fe speciation proxy studies that show a general increase in reactive Fe in the boundary sediments. The framboid gap that widely observed in Tethyan sections might be due to a lack of HS-/S2-.