**H2S events in the Peruvian oxygen minimum zone facilitate enhanced dissolved Fe concentrations**

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S1 – Applied concentrations and stability coefficient of model parameters for Visual MINTEQ 3.1

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| --- | --- |
| components | concentrations  |
|  |  |
| Na1+ | 481 mM |
| K1+ | 10 mM |
| Mg2+ | 54 mM |
| Ca2+ | 11 mM |
| Sr2+ | 90 µM |
| Cl-1 | 650 mM |
| Br-1 | 870 µM |
| CO3-2 | 2 mM |
| B(III) | 430 µM |
| F-1 | 70 µM |
| H2S (variable) | 0.001 – 100 mM |
| Fe(II)  | 0.2 µM |
| pH | 7.651 |
|  |  |
| included species |
| mackinawite  | log Ksp = -3.62 |
| FeSaqu | log K = 5.623 |
|  |  |

Supplementary Figures



Figure S1: Shows vertical diffusivity (Kρ) versus depth. Kρ was estimated from 102 microstructure deployments at stations with water depth between 80 and 100 m as described in Schaftstall et al. 4. The data was collected during FS Metor cruise M92-2 in January 2012 (for more detail please read Sommer et al. 5). Cruise M92-2 took place in the same OMZ region than Meteor cruise M77-3. The dashed black line indicates the average Kρ at depth. The vertical diffusive DFe flux was calculated using an average value of Kρ = 3.1 x 10-4 m2 s-1, derived from Kρ values between mid-depth waters (40m) and the surface (10m).

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