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Blind Submarine Valleys in the Gulf of Cadiz. Structures of seabed fluid flow

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Blind submarine valleys are defined as giant, elongated (3 to 10 km long), collapsed and complex fault-strike features comprising mega-collapses and mega-pockmarks, generated in gas-venting areas and not associated to the collapse of mud-volcano complexes. We detected the blind valleys above diapiric structures. The collapse processes associated to blind valleys result from fluid escape through migration pathways which, in turn, are created by distension due to diapiric activity or to later tectonic reactivation of these diapirs. The evolution of these blind valleys, and their present-day morphology as furrows, derives from progressive fluid migration as well as from interaction of Mediterranean Outflow Water with the seafloor.