ON THE RATIONALITY PROBLEM FOR QUADRIC SURFACE BUNDLES OVER THE REAL PROJECTIVE LINE. THIS IS A JOINT WORK WITH ALENA PIRUTKA

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We consider the question whether a real threefold fibred into quadric surfaces over the real projective line is stably rational (over the reals) if the topological space of real points is connected. We give a counterexample. When all geometric fibres are irreducible, the question is open. We investigate a family of such fibrations for which the intermediate jacobian technique is not available. For these, we produce two independent methods which in many cases enable one to prove decomposition of the diagonal.