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*The Douglas-Rachford algorithm in the possibly inconsistent case*

The Douglas–Rachford algorithm is a very popular splitting technique for finding a zero of the sum of two maximally monotone operators. The behaviour of the algorithm remains mysterious in the general inconsistent case, i.e., when the sum problem has no zeros. However, more than a decade ago, it was shown that in the (possibly inconsistent) convex feasibility setting, the shadow sequence remains bounded and its weak cluster points solve a best approximation problem. In this talk, we advance the understanding of the inconsistent case significantly by presenting a complete proof of the full weak convergence in the convex feasibility setting. We also provide linear rate of convergence and strong convergence in special cases.