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A solution method for compact linear operator equations based on the Arnoldi process

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We are concerned with the solution of linear operator equations with a compact operator. These operators do not have a bounded inverse and therefore these kinds of equations have to be regularized before solution. The Arnoldi process provides a convenient way to reduce a compact operator to a nearby operator of finite rank and regularization is achieved with
Tikhonov's method. We investigates properties of this simple solution approach. Computed examples illustrate the theory presented.

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