

## **The optimal error bound for the method of simultaneous projections**

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In this talk we find the optimal error bound (smallest possible estimate, independent of the starting point) for the linear convergence rate of the simultaneous projection method applied to closed linear subspaces in a real Hilbert space. We achieve this by computing the norm of an error operator which we also express in terms of the Friedrichs number. We compare our estimate with the optimal one provided for the alternating projection method by Kayalar and Weinert (1988). Moreover, we relate our result to the alternating projection formalization of Pierra (1984) in a product space. Finally, we adjust our results to closed affine subspaces and put them in context with recent dichotomy theorems. This is joint work with Simeon Reich.