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# Review: On pairs of generalized and hypergeneralized projections in a Hilbert space

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**MR3243635 (Review) 47A05****Radosavljević, Sonja (SE-NISSM); Djordjević, Dragan S. (SE-NISSM)****On pairs of generalized and hypergeneralized projections in a Hilbert space.****(English summary)***Funct. Anal. Approx. Comput.* **5** (2013), no. 2, 67–75.

Let  $\mathcal{H}$  be a Hilbert space and  $\mathcal{L}(\mathcal{H})$  denote the set of bounded linear operators on  $\mathcal{H}$ . One says that  $A \in \mathcal{L}(\mathcal{H})$  is a *generalized projection* if  $A^2 = A^*$  and a *hypergeneralized projection* if  $A^2 = A^\dagger$ . Here  $A^\dagger$  denotes the Moore-Penrose generalized inverse of  $A$ . The authors provide a number of characterizations of generalized and hypergeneralized projections. They also provide block-matrix representations for these operators, and they examine conditions which imply that the product, difference, or sum of such operators belongs to the same class. *Stephan R. Garcia*

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