

# İSTANBUL ANALYSIS SEMINARS

## ESSENTIAL SPECTRA OF WEIGHTED COMPOSITION OPERATORS ON SOBOLEV-TYPE SPACES

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**Abstract:** Let  $X$  be an interpolation space between  $L^1(0, 1)$  and  $L^\infty(0, 1)$ . We consider the Banach algebra  $W^{1,X}$  of all absolutely continuous functions on  $[0, 1]$  with derivatives in  $X$ . Let  $T$  be a bounded weighted composition operator on  $W^{1,X}$ . The study of essential spectra of  $T$  can be reduced to that of some weighted composition on  $X$ . That allows us to give a simple condition for essential spectra of  $T$  to be rotation invariant.

We obtain a complete description of the spectrum and essential spectra of  $T$  in the case when the Boyd indices of  $X$  are equal and strictly between 0 and  $\infty$ , and  $T$  is an invertible operator.

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