i.e. $\lambda \in \Lambda_A$. Hence the condition (SE') is fulfilled for an arbitrary couple $\lambda^{(1)} = \lambda_{n+1}$, $\lambda^{(0)} = \lambda_n$, where $\{\lambda_n\}$ $(\lambda_{n+1} < \lambda_n)$ denotes the sequence of all eigenvalues of A. Moreover, it is well-known that A has only simple eigenvalues. If $\lambda_{n+1}, \lambda_n \in \Lambda_i$ for some n (i.e. $u_{n+1}(x_0) \neq 0$, $u_n(x_0) \neq 0$ for the corresponding eigenvectors u_n, u_{n+1}) then we can use Theorem 3.3 and Remark 3.5. We obtain a "new" eigenvalue $\lambda_n^\infty \in (\lambda_{n+1}, \lambda_n) \cap (\Lambda_{V,b} \setminus \Lambda_A)$ and a "new" eigenvector $u_n \in (E_V \setminus E_A) \cap \partial K$ for the couples $\lambda_n, \lambda_{n+1} \in \Lambda_i$. Let us remark that the eigenvalues of (I), (II) in this special case can be calculated on the basis of a method explained in [1]. The existence of an infinite sequence of eigenvalues of (I), (II) in the case of a general halfspace follows from [6, Section 3]. The case of the cone $K = \{u \in H;\ u(x_i) \geqq 0,\ i = 1, \ldots, n\}$ is nontrivial for $n > 1$ for the variational inequality of the fourth order, but the special results discussed in this paper cannot be used for it. It is possible to use more general theorems based on the bifurcation theory (see [4, Section 4]).

Added in proof. It is possible to show that the assumption $\Lambda_b \cap \langle \lambda^{(1)}, \lambda^{(2)} \rangle = \emptyset$ can be omited in all assertions in the case of penalty operators of the type (2.1) because the branch u_ε can not meet points $u \in \delta K \cap E_A$. Particularly, Theorem 4.3 ensures the existence of infinitely many points $u \in E_V \setminus E_A$ if Λ_i contains infinitely many points. Analogously in Examples 5.1, 5.2. It wil be explained in more general situation in [5].

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