CRITICAL POINT THEORY FOR LAGRANGIAN SYSTEMS
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ERRATA CORRIGE

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- The last part of the proof of Lemma 2.1.2 (page 33) contains a silly mistake: the set $\boldsymbol{E}_{\mathscr{K}}^{\leq -c_P}$ is clearly not a direct sum of eigenspaces of $\mathscr{K}$, it is rather a cone. The paragraph

  "Notice that $\boldsymbol{E}_{\mathscr{K}}^{\leq -c_P}$ is the direct sum [...] is finite dimensional."

  should be replaced with the following:

  "Assume by contradiction that there exists a linearly independent infinite sequence $\{\boldsymbol{v}_n \mid n \in \mathbb{N}\}$ contained in $\boldsymbol{E}_{\mathscr{B}}^{-} \cap \boldsymbol{E}_{\mathscr{P}}^{+}$. Let $\boldsymbol{E}_0$ [resp. $\boldsymbol{E}_1$] be the direct sum of the eigenspaces of K corresponding to the eigenvalues less than or equal to $-c_P$ [resp. greater than $-c_P$], and let $\pi : \boldsymbol{E} \to \boldsymbol{E}_0$ be the orthogonal projection. Since K is compact, $\boldsymbol{E}_0$ is finite dimensional. Therefore, we can find $n_1, ..., n_k \in \mathbb{N}$ and $\lambda_1, ..., \lambda_k \in \mathbb{R}$ such that
  $$\pi(\boldsymbol{v}_{n_k+1}) = \lambda_1 \pi(\boldsymbol{v}_{n_1}) + ... + \lambda_k \pi(\boldsymbol{v}_{n_k}).$$
  Notice that
  $$\boldsymbol{v}_{n_k+1} \neq \lambda_1 \boldsymbol{v}_{n_1} + ... + \lambda_k \boldsymbol{v}_{n_k},$$
  since the sequence $\{\boldsymbol{v}_n \mid n \in \mathbb{N}\}$ is linearly independent. Thus, the vector
  $$\boldsymbol{v} := \boldsymbol{v}_{n_k+1} - \lambda_1 \boldsymbol{v}_{n_1} - ... - \lambda_k \boldsymbol{v}_{n_k}$$
  is nonzero and contained in $\boldsymbol{E}_{\mathscr{B}}^{-} \cap \boldsymbol{E}_{\mathscr{P}}^{+} \cap \boldsymbol{E}_1$. This is a contradiction, since $\boldsymbol{E}_{\mathscr{K}}^{\leq -c_P} \cap \boldsymbol{E}_1 = \{\boldsymbol{0}\}$."

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If you find further inaccuracies, please send me an e-mail to `marco.mazzucchelli@ens-lyon.fr`.