dependence of eigenfunction of Laplacian on domain

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% The real numbers
\def\IR{{\bf R}}\parindent0pt\parskip1ex

The pdf−version of this posting is available at
{\tt http://www.tn−home.de/Tobias/Mathe/040922.pdf}

In the following, I call an eigenfunction of the Laplacian $\Delta$ as
{\it main eigenfunction} if it corresponds to the eigenvalue with smallest
absolute value.

−− The question in rough words:

Is there a main eigenfunction of the two−dimensional
Laplacian which is continuously dependent on the domain?

−− The more precise question:

Let $G$ be some bounded domain of $\IR^2$ with smooth boundary and let
$\Phi_p:G\rightarrow G_p:=\Phi_p(G)$ be a family of diffeomorphisms
smoothly parameterised by $p\in(0,1)$. Thereby, each $G_p$ shall be
bounded.

Is there for each $p\in(0,1)$ a main eigenfunction $\phi_p$ of the
Laplacian $\Delta$ on $G_p$ such that the family
$(\phi_p)_{p\in(0,1)}$ is continuously parameterised by $p\in(0,1)$???

I would be thankful for any useful comment on this question.

With best regards,

Tobias N\"ahring
\bye
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