# Kirchhoff-type thin plates with mixed boundary conditions

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**Abstract**

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## 1. Introduction

The equations are listed sequentially in the text, numbered on the right and using the command `\label{}` to identify them and the command `\eqref{}` whenever necessary mention them in the text. For example,

$$\partial_t^2 u(x,t) - \mu(t)\Delta u(x,t) = 0 \quad \text{in} \quad Q, \tag{1.1}$$

with initial and boundary conditions

$$\begin{aligned} u(x,0) = u_0(x), \quad \partial_t u(x,0) = u_1(x) \quad \text{in} \quad \Omega, \\ u(x,t) = 0 \quad \text{on} \quad \Gamma\times]0,\infty[, \end{aligned} \tag{1.2}$$

where $u$ is the displacement, $\Delta$ denotes the Laplace operator and $\mu$ is a positive real function, introduced by [1, p.12]. Existence and uniqueness results can be found in [2, 3].

To generate the figures is recommended to use the following structure:

```
\begin{figure}
\includegraphics[scale=•]{•}
\caption{•}
\end{figure}
```

and are cited in the text via the command `\eqref{}` with the name of "label" in brackets, analogously the equations.

Finally, to end the proof use `\cqdf`

## 2. Main Results

The main results are ...

**Theorem 2.1.** *Suppose ...*

**Proposition 2.1.** *If* $u_0 \in H_0^1(\Omega) \cap H^2(\Omega)$ *and* $u_1 \in H_0^1(\Omega)$ *then the system has a unique solution in the class*

$$\begin{aligned} &u \quad \textit{belongs to} \quad L^\infty\left(0,\infty; H_0^1(\Omega) \cap H^2(\Omega)\right), \\ &\partial_t u \quad \textit{belongs to} \quad L^\infty\left(0,\infty; H_0^1(\Omega)\right), \\ &\partial_t^2 u \quad \textit{belongs to} \quad L^\infty\left(0,\infty; L^2(\Omega)\right). \end{aligned} \tag{2.1}$$

*Proof.* Using ... one has ... ∎

**Proposition 2.2.** *Considering* $\cdots$

It is an immediate consequence of Propositions 2.1 $\cdots$

**Corollary 2.1.** *This is an immediate consequence of Proposition 2.2 ...*

The above Corollary was generated by

```
\begin{mycor}\label{2.1}
$\ldots+\cdots=\frac{a}{b} \vdots\ddots \rightthreetimes \leftthreetimes$ this $\nexists$!
\end{mycor}
```

The reference list (bibliography) at the end of this text can be generated as follows:

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\begin{thebibliography}{00}
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```

References are introduced in the text via the command `\cite{}`.

## References

[1] Lions, J. L. - *Quelques méthodes de résolution des problèmes aux limites non linéares*, Dunod-Gauthier Villars, Paris, first edition, (1969).

[2] Sobolev, S. I. - *Applications de analyse functionnelle aux équations de la physique mathématique*, Léningrad, (1950).

[3] Costa, R. H. & Silva, L. A. - *Existence and boundary stabilization of solutions*, Analysis Journal, **10**, (2010), 422-444.