CSIAM Trans. Life. Sci.
doi:

Vol. **xx**, No. x, pp. 1-15
xxx 20xx

Here is the Title

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Abstract. The abstract should provide the application context and briefly summarise the main findings. It should not be too long — normally no longer than half a page.

AMS subject classifications: 65M10, 78A48

Key words: At least 3 items and at most 5 items.

1 Preparation of manuscript

1.1 Formulas

1.1.1 Inline mathematical expressions

In inline mathematical expressions do not use the commands `\left`, `\right`, `\big`, `\Big`, `\bigg`, `\Bigg`, `\displaystyle`, etc., which can enlarge the brackets or the symbols.

1.1.2 One-line equations

For non-numbered one-line equations, use the command `equation*` rather than `$$ $$` and `\[ \]`. For example, the equation

$$a \neq b$$

should be written as

```
\begin{equation*}
 a\neq b
\end{equation*}
```

The numbered one-line equations should be typewritten by using `equation` environment. For example,

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```
\begin{equation}\label{eq1.1}
ax=c.
\end{equation}
```

to obtain

$$ax=c. \tag{1.1}$$

Avoid using the `align` or `align*` environment.

1.1.3 Multi-line equations

Avoid using the obsolete `eqnarray` or `eqnarray*` environment, which has several bugs.

For non-numbered multi-line equations, use the commands `align*`, `alignat*`. For example:

Example 1.1. The equations

$$\begin{aligned} v_h(x,y)&=V_1(x,y),\\ v_h^+(x,y)&=v_h^-(x,y). \end{aligned}$$

can be written as

```
\begin{align*}
&v_h(x,y)=V_1(x,y),\\
&v_h^+(x,y)=v_h^-(x,y).
\end{align*}
```

Example 1.2. The equations

$$\begin{aligned} V(x)&=\frac{K(\epsilon)\epsilon}{\rho}, && x\in(0,x^*],\\ V'(x)&=\frac{M}{m}-\sqrt{\frac{4\rho V(x)}{m}}, && x>x^*. \end{aligned}$$

can be written as

```
\begin{alignat*}{2}
& V(x)=\frac{K(\epsilon)\epsilon}{\rho}, && \quad x\in(0,x^*], \\
& V'(x)=\frac{M}{m}-\sqrt{\frac{4\rho V(x)}{m}}, && \quad x>x^*.
\end{alignat*}
```

Example 1.3. The equation

$$\begin{aligned}\big|d^V(x,\lambda)\big| &= \left|\int_\Gamma \big\{V\big(x-\alpha(p(\lambda),\gamma,x)\big)-V(x)\big\}\right| \\ &\le \int_\Gamma \big|V\big(x-\alpha(p(\lambda),\gamma,x)\big)\big|\mu(d\gamma) \\ &\le M\left\{1+\int_\Gamma \big(x-\alpha(p(\lambda),\gamma,x)\big)^2\mu(d\gamma)\right\}x^2 \\ &\le M(1+x^2)+\lambda(0)K+Mx\end{aligned}$$

can be written as

```
\begin{align*}
  \big|d^V(x,\lambda)\big|
  &=\left|\int_{\Gamma} \left\{V\big(x-\alpha(p(\lambda),\gamma,x)\big)
  -V(x)\right\}\right| \\
  & \le \int_{\Gamma}\big|V\big(x-\alpha(p(\lambda),\gamma,x)\big)\big|
  \mu(d\gamma)\\
  & \le M\left\{1+\int_{\Gamma}\big(x-\alpha(p(\lambda),\gamma,x)\big)^2
  \mu(d\gamma)\right\}x^2\\
  & \le M(1+x^2)+\lambda(0)K+ Mx
\end{align*}
```

Example 1.4. The equation

$$\begin{aligned}\big|d^V(x,\lambda)\big| &= \left|\int_\Gamma \big\{V\big(x-\alpha(p(\lambda),\gamma,x)\big)-V(x)\big\}\right| \\ &\quad+\int_\Gamma \big|V\big(x-\alpha(p(\lambda),\gamma,x)\big)\big|\mu(d\gamma) \\ &\le M\left\{1+\int_\Gamma \big(x-\alpha(p(\lambda),\gamma,x)\big)^2\mu(d\gamma)\right\}x^2 \\ &\quad\times M(1+x^2)+\lambda(0)K+Mx\end{aligned}$$

can be written as

```
\begin{align*}
  \big|d^V(x,\lambda)\big|
  &=\left|\int_{\Gamma} \left\{V\big(x-\alpha(p(\lambda),\gamma,x)\big)
  -V(x)\right\}\right| \\
  & \quad+ \int_{\Gamma}\big|V\big(x-\alpha(p(\lambda),\gamma,x)\big)\big|
  \mu(d\gamma)\\
  & \le M\left\{1+\int_{\Gamma}\big(x-\alpha(p(\lambda),\gamma,x)\big)^2
  \mu(d\gamma)\right\}x^2\\
  & \quad\times M(1+x^2)+\lambda(0)K+ Mx
\end{align*}
```

Thus numbered equations should be typewritten by using `equation`, `align`, `alignat`, `aligned` environments.

Example 1.5. The equations

$$v_h(x,y)=V_1(x,y), \tag{1.2}$$
$$v_h^+(x,y)=v_h^-(x,y). \tag{1.3}$$

can be written as

```
\begin{align}
&v_h(x,y)=V_1(x,y),\label{eq2.2}\\
&v_h^+(x,y)=v_h^-(x,y).\label{eq2.3}
\end{align}
```

Example 1.6. The equations

$$\begin{aligned} v_h(x,y)&=V_1(x,y),\\ v_h^+(x,y)&=v_h^-(x,y). \end{aligned} \tag{1.4}$$

can be written as

```
\begin{equation}\label{eq2.4}
\begin{aligned}
&v_h(x,y)=V_1(x,y),\\
&v_h^+(x,y)=v_h^-(x,y).
\end{aligned}
\end{equation}
```

Do not use the construction

```
\begin{equation*}
\begin{aligned}
&v_h(x,y)=V_1(x,y),\\
&v_h^+(x,y)=v_h^-(x,y).
\end{aligned}
\end{equation*}
```

It should be `align*` instead (see Example 1.1).

Example 1.7. The equation

$$\begin{aligned} v_h(x,y)=&V_1(x,y)+v_h^-(x,y)\\ &+V_2(x,y)+v_h^+(x,y). \end{aligned} \tag{1.5}$$

can be written as

```
\begin{align}
v_h(x,y)&=V_1(x,y)+v_h^-(x,y)\nonumber\\
        &\quad +V_2(x,y)+v_h^+(x,y).\label{eq2.5}
\end{align}
```

or

```
\begin{align}\label{eq2.5}
v_h(x,y)&=V_1(x,y)+v_h^-(x,y)\nonumber\\
        &\quad +V_2(x,y)+v_h^+(x,y).
\end{align}
```

The number should be on the last line.

Example 1.8. The equations

$$V(x)=\frac{K(\epsilon)\epsilon}{\rho}, \quad x\in(0,x^*], \tag{1.6}$$

$$V'(x)=\frac{M}{m}, \qquad x>x^*. \tag{1.7}$$

can be written as

```
\begin{alignat}{2}
& V(x)=\frac{K(\epsilon)\epsilon}{\rho},
&& \quad x\in(0,x^*], \label{eq3.1}\\
& V'(x)=\frac{M}{m},
&& \quad x>x^*.\label{eq3.2}
\end{alignat}
```

Equations should be cited by using the `\eqref` command and the form `\eqref{eq2.3}` or `Eq.~\eqref{eq2.2}`. In the text they appear as (1.3) or Eq. (1.2).

1.2 Other examples

1.2.1 Cases

Preferred format is `cases`, not `aligned`, `array`, etc.

Example 1.9.

$$p^*(x)=\begin{cases} M-\epsilon, & 0<x<x^*, \\ -\sqrt{\rho V(x)}, & x\geq x^*. \end{cases} \tag{1.8}$$

```
\begin{equation} \label{eq:optimaldemandexam1-case2}
      p^*(x)=
      \begin{cases}
         M-\epsilon, & 0<x< x^*,\\
         -\sqrt{\rho V(x)}, & x\geq x^*.
      \end{cases}
\end{equation}
```

or

$$p^*(x)=\begin{cases} M-\epsilon, & 0<x<x^*, \\ -\sqrt{\rho V(x)}, & x\geq x^*. \end{cases}$$

```
\begin{equation*}
      p^*(x)=
      \begin{cases}
         M-\epsilon, & 0<x< x^*,\\
         -\sqrt{\rho V(x)}, & x\geq x^*.
      \end{cases}
\end{equation*}
```

1.3 Theorems, corollaries, lemmas, definitions

For theorems, lemmas, corollaries, propositions, definitions, examples and remarks special environments are predefined. Please use the following constructions:

Theotems

```
\begin{theorem}
Text of theorem.
\end{theorem}

or

\begin{theorem}\label{thm1}
Text of theorem.
\end{theorem}
```

Theorem 1.1. *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Results from other sources can be written in the form

```
\begin{theorem}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{thm1}
Text of theorem.
\end{theorem}
```

Theorem 1.2 (cf. Author & Co-Author [1])**.** *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Lemmas

```
\begin{lemma}
Text of lemma.
\end{lemma}

or

\begin{lemma}\label{lem1}
Text of lemma.
\end{lemma}
```

Lemma 1.1. *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Results from other sources can be written in the form

```
\begin{lemma}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{lem1}
Text of lemma.
\end{lemma}
```

Lemma 1.2 (cf. Author & Co-Author [1])**.** *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Corollaries

```
\begin{corollary}
Text of corollary.
\end{corollary}

or

\begin{corollary}\label{clr1}
Text of corollary.
\end{corollary}
```

Corollary 1.1. *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Results from other sources can be written in the form

```
\begin{corollary}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{clr1}
Text of corollary.
\end{corollary}
```

Corollary 1.2 (cf. Author & Co-Author [1]). *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Propositions

```
\begin{proposition}
Text of proposition.
\end{proposition}

or

\begin{proposition}\label{prop1}
Text of proposition.
\end{proposition}
```

Proposition 1.1. *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Results from other sources can be written in the form

```
\begin{proposition}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{prop1}
Text of proposition.
\end{proposition}
```

Proposition 1.2 (cf. Author & Co-Author [1]). *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Definitions

```
\begin{definition}
Text of definition.
\end{definition}

or

\begin{definition}\label{def1}
Text of definition.
\end{definition}
```

Definition 1.1. *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Results from other sources can be written in the form

```
\begin{definition}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{def1}
Text of definition.
\end{definition}
```

Definition 1.2 (cf. Author & Co-Author [1])**.** *A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.*

Remarks

```
\begin{remark}
Text of remark.
\end{remark}

or

\begin{remark}\label{rem1}
Text of remark.
\end{remark}
```

Remark 1.1. A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.

Results from other sources can be written in the form

```
\begin{remark}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{rem1}
Text of remark.
\end{remark}
```

Remark 1.2 (cf. Author & Co-Author [1])**.** A matrix A is called invertible if there exists a matrix B such that $AB=BA=E$, where E is the identity matrix.

Examples

```
\begin{example}
Text of example.
\end{example}

or

\begin{example}\label{ex1}
Text of example.
\end{example}
```

Example 1.10. $Z=-\mathrm{Id}_2$. This serves as the most rudimentary case for a bilayer plate, as delineated earlier. The absolute minimizer is a cylinder of radius 1 with energy 20.

Results from other sources can be written in the form

```
\begin{example}[cf.~Author \& Co-Author~\cite{firstauthor}]\label{ex1}
Text of example.
\end{example}
```

Example 1.11 (cf. Author & Co-Author [1])**.** $Z=-\mathrm{Id}_2$. This serves as the most rudimentary case for a bilayer plate, as delineated earlier. The absolute minimizer is a cylinder of radius 1 with energy 20.

For typesetting your proofs use predefined environment `proof`.

```
\begin{proof}
Text of proof.
\end{proof}
```

Proof. For the solution u that minimize the energy (3.1) under isometric constraint (3.2), it is straightforward that $[u]=I[u]\geq 0$. Consider the spontaneous curvature Z with $Z_{11}=1$ and $Z_{ij}=0$ otherwise. Since

$$I[u]=E[u]+\beta C[u]^2\leq -\frac{4|\Omega|}{625\beta},$$

when $\beta\geq 1$, we conclude that the lower bound of the energy error is at least $O(1/\beta)$. □

1.4 Figures

Figures should be in a finished form suitable for publication (in eps format). Number figures consecutively with Arabic numerals. Lettering on drawings should be generated by high-resolution computer graphics and large enough to withstand appropriate reduction for publication.

Here are some templates for figures:

```
\begin{figure}[!tbh]
\centering
\includegraphics[scale=0.5]{filename}
\caption {Example 1.}
\label{fig1}
\end{figure}
```

You can also use following parameters:

```
[width=1in,height=2in]
[width=40mm] or [height=2cm]
```

For two images you can use

```
\begin{figure}[!tbh]
\centering
\begin{minipage}{0.47\textwidth}
\centering
\includegraphics[height=3.5cm]{filename}
\end{minipage}
\begin{minipage}{0.47\textwidth}
\centering
\includegraphics[height=3.5cm]{filename}
\end{minipage}
\caption {Example 2.}
\label{fig2}
\end{figure}
```

or

```
\begin{figure}[!tbh]
\centering
\begin{minipage}{0.45\textwidth}
\centering
\includegraphics[width=4cm,height=6cm]{filename}\\
\scriptsize{a)}
\end{minipage}
\begin{minipage}{0.45\textwidth}
\centering
\includegraphics[width=4cm,height=6cm]{filename}\\
\scriptsize{b)}
\end{minipage}
\caption {Example 3.}
\label{fig2}
\end{figure}
```

if you need captions for the images.

1.5 Tables

Here are some templates for tables:

Table 1: Example 1.

N_t	L_∞ Error	CR	L_∞ Error	CR
8	6.3603e-01	-	5.2903e-02	-
16	2.1078e-01	1.59	1.0824e-02	2.29
32	7.9903e-02	1.40	2.6661e-03	2.02
64	3.5422e-02	1.17	6.7627e-04	1.98

```
\begin{table}[!tbh]
\caption{Example 1.}
\label{ex_1}
\centering
\medskip\small\renewcommand{\arraystretch}{1.15}
\begin{tabular}{||ccccc||}
\hline
$N_t$  & $L_\infty$ Error & CR  &$L_\infty$ Error & CR  \\
\hline
8   & 6.3603e-01  & -    & 5.2903e-02 & -\\
16  & 2.1078e-01  & 1.59 & 1.0824e-02 & 2.29  \\
32  & 7.9903e-02  & 1.40 & 2.6661e-03 & 2.02  \\
64  & 3.5422e-02  & 1.17 & 6.7627e-04 & 1.98  \\
\hline
\end{tabular}
\end{table}
```

Table 2: Example 2.

	N_t	L_∞ Error	CR	L_∞ Error	CR
1	8	6.3603e-01	-	5.2903e-02	-
2	16	2.1078e-01	1.59	1.0824e-02	2.29
3	32	7.9903e-02	1.40	2.6661e-03	2.02
4	64	3.5422e-02	1.17	6.7627e-04	1.98

```
\begin{table}[!tbh]
\caption{Example 2.}
\label{ex_2}
\centering
\medskip\small\renewcommand{\arraystretch}{1.15}
\begin{tabular}{||l|ccccc||}
\hline
&$N_t$  & $L_\infty$ Error & CR  &$L_\infty$ Error & CR  \\
\hline
1 & 8   & 6.3603e-01  & -    & 5.2903e-02 & -\\
2 & 16  & 2.1078e-01  & 1.59 & 1.0824e-02 & 2.29  \\
3 & 32  & 7.9903e-02  & 1.40 & 2.6661e-03 & 2.02  \\
4 & 64  & 3.5422e-02  & 1.17 & 6.7627e-04 & 1.98  \\
\hline
\end{tabular}
\end{table}
```

Table 3: Example 3.

Accuracy of time discretisation, $N_x \times N_y = 4096^2$					
N_t	L_∞ Error	CR	N_t	L_∞ Error	CR
8	6.3603e-01	-	4	8.0540e-02	-
16	2.1078e-01	1.59	8	7.7251e-03	3.38
32	7.9903e-02	1.40	16	1.0326e-03	2.90
64	3.5422e-02	1.17	32	1.4975e-04	2.79

```
\begin{table}[!tbh]
\caption{Example 3.}
\label{t3}
\centering
\medskip\small\renewcommand{\arraystretch}{1.15}
\begin{tabular}{||ccc|ccc||}
\hline
\multicolumn{6}{||c||}{{Accuracy of time discretisation,
$N_x\times N_y=4096^2$}} \\
\hline
$N_t$ & $L_\infty$ Error  & CR   &  $N_t$ &  $L_\infty$ Error & CR    \\
\hline
8     & 6.3603e-01        & -    &   4    &  8.0540e-02 & -      \\
16    & 2.1078e-01        & 1.59 &   8    &  7.7251e-03 & 3.38   \\
32    & 7.9903e-02        & 1.40 &   16   &  1.0326e-03 & 2.90   \\
64    & 3.5422e-02        & 1.17 &   32   &  1.4975e-04 & 2.79   \\
\hline
\end{tabular}
\end{table}
```

Table 4: Example 4.

	N_t	L_∞ Error	CR	L_∞ Error	CR
1	8	6.3603e-01	-	5.2903e-02	-
2	16	2.1078e-01	1.59	1.0824e-02	2.29
3	32	7.9903e-02	1.40	2.6661e-03	2.02
4	64	3.5422e-02	1.17	6.7627e-04	1.98

```
\begin{table}[!tbh]
\caption{Example 4.}
\label{t4}
\centering
\medskip\small\renewcommand{\arraystretch}{1.15}
\begin{tabular}{||l|ccccc||}
\hline
&$N_t$  & $L_\infty$ Error & CR  &$L_\infty$ Error & CR  \\
\cline{3-5}
1 & 8   & 6.3603e-01  & -    & 5.2903e-02 & -\\
2 & 16  & 2.1078e-01  & 1.59 & 1.0824e-02 & 2.29  \\
3 & 32  & 7.9903e-02  & 1.40 & 2.6661e-03 & 2.02  \\
4 & 64  & 3.5422e-02  & 1.17 & 6.7627e-04 & 1.98  \\
\hline
\end{tabular}
\end{table}
```

For big tables you can change font size

`\medskip\small\renewcommand{\arraystretch}{1.15}`

to

`\medskip\footnotesize\renewcommand{\arraystretch}{1.15}`

and/or reduce space between columns

`\addtolength{\tabcolsep}{-0.9mm}`

and/or reduce space between rows

`\medskip\small\renewcommand{\arraystretch}{1.02}`

References

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