

pst-stru:

Structural schemes v0.12

Giuseppe Matarazzo*

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pst-stru is a PSTricks package to draw structural schemes in civil engineering analysis (beams, portals, archs, piles).

Contents

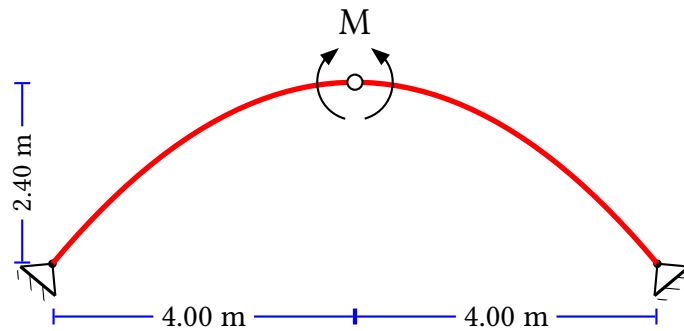
1	Simple example	2
2	Elastic line	2
3	Antisymmetric distributed load	4
4	Antisymmetric load	5
5	Triangular load	6
6	Loads: Position and naming	7
7	Distributed load	8
8	Macro \triload	9
9	Non-symmetric superimposed dead load	12
10	Distributed load for all beams	13
11	Distributed load for all beams	14
12	Triangular distributed load p	17
	References	18

* Thanks to Manuel Luque who inspired and initially supported this work.

Documentation revised by Herbert Voß

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1 Simple example



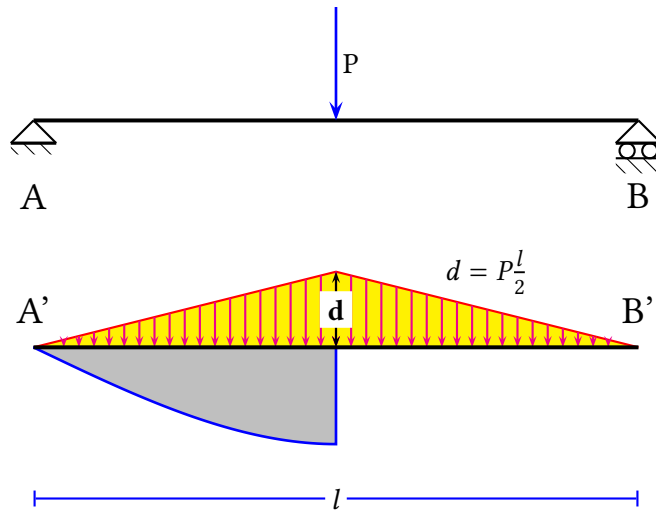
```
\psset{arrowsize=0.8mm,arrowinset=0}
\begin{pspicture}(-5,-1)(5,5)
  \pnode(0,2.4){00}\pnode(-4,0){A}\pnode(4,0){B}
  \node(A)\node(B)
  \psplot[linecolor=red,linewidth=2pt]{-4}{4}{x neg x mul 0.15 mul 2.4 add}
  \rput{-39.8}{A}{\hinge}\rput{39.8}{B}{\hinge}\rput{0}{00}{\interhinge}
  \rput{-5}{00}{\clockCouple}\rput{5}{00}{\noclockCouple}
  \rput(0,3.2){\Large M}
  \pcline[offset=-7mm,linecolor=blue]{|-|}(-4,0)(0,0)
  \lput*{:U}{\large 4.00 m}
  \pcline[offset=-7mm,linecolor=blue]{|-|}(0,0)(4,0)
  \lput*{:U}{\large 4.00 m}
  \pcline[offset=0pt,linecolor=blue]{|-|}(-4.4,0)(-4.4,2.4)
  \lput*{:U}{2.40 m}
\end{pspicture}
```

2 Elastic Line of a simple beam loaded with concentrated load P at the center line

Bernoulli's Equation: $EJ\eta'' = -M$

The **elastic curve** of the assigned beam AB (P loaded at mid-span) is obtained by computing the Bending Moment of the auxiliary beam A'B' to which is applied the BM of AB ($EJ=\text{const}$)

$$EJ \cdot \eta = \frac{Pl^2}{16}x - \frac{P}{12}x^3 \quad 0 \leq x \leq l/2$$

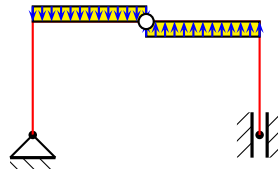


```

\begin{pspicture}(-1,-2.4)(9,4.5)
  \pnode(0,3){A}\pnode(8,3){B}\pnode(0,0){A1}\pnode(8,0){B1}\pnode(4,0){M}
  \psline[linewidth=1.5pt](0,3)(8,3) % Beam AB
  \psArrowCivil[RotArrows=0,length=1.5,start=0.5,%
    linecolor=blue,arrowsize=1.8mm,OffsetLabel=0.2,linewidth=1pt](A)(B){\rput{90}{P}}
  \rput{0}{A}{\hinge} \rput{0}{B}{\roller}
  \psline[linecolor=red,fillcolor=yellow,fillstyle=solid](0,0)(4,1)(8,0)
  \rput(0,2){\Large A} \rput(8,2){\Large B}
  %% 1st half load
  \multido{\nStart=1.00+0.05}{-19}{%
    \psArrowCivil[RotArrows=0,length=\nStart,start=\nStart,linecolor=magenta](A1)(M){}}
  %% 2nd half load
  \multido{\nStart=1.00+0.05}{-19}{%
    \psArrowCivil[RotArrows=180,length=\nStart,start=\nStart,linecolor=magenta](B1)(M){}}
  \pcline{<->}(4,0)(4,1)\lput*{:R}{\bfseries d}
  \rput(6,1){$d=P\frac{l}{2}$} \rput(0,0.5){\Large A'} \rput(8,0.5){\Large B'}
  \pcline[linecolor=blue]{|-|}(0,-2)(8,-2)\lput*{:U}{\bfseries $l$}
  % Parameters #1 P = 6 #2 l=8 #3 scale factor =0.02
  %----- Elastic curve of beam AB -----
  \def\ElasticAB#1#2#3{#1 16.0 div #2 #2 x mul mul mul
    #1 -12.0 div x x x mul mul mul add #3 mul neg}
  \pscustom[linecolor=blue,linewidth=1pt,fillstyle=solid,fillcolor=lightgray]{%
    \psplot[0.0]{0.0}{4.0}{\ElasticAB{6}{8}{0.02}}
    \psline(4,0)(0,0)}
  \psline[linewidth=1.5pt](0,0)(8,0) % Beam A'B'
\end{pspicture}

```

3 Antisymmetric distributed load



```

\begin{pspicture}(-3,-0.5)(4,2)
\pnode(0,1.5){O0}\pnode(1.5,1.5){C}\pnode(-1.5,1.5){D}\pnode(-1.5,0){A}\pnode(1.5,0){B}
\node(A)\node(B)
\psline[linecolor=red](A)(D)(C)(B)
\rput{0}(A){\hinge}\rput{90}(B){\guide}
\psframe[fillstyle=solid,fillcolor=yellow](-1.5,1.5)(0,1.7)
\psframe[fillstyle=solid,fillcolor=yellow](0,1.3)(1.5,1.5)
\multido{\nStart=0.0+0.0833}{13}{%
\psArrowCivil[RotArrows=0,length=0.2,start=\nStart,linecolor=blue](D)(O0){}
\psArrowCivil[RotArrows=180,length=0.2,start=\nStart,linecolor=blue](O0)(C){}}
\rput{0}(O0){\interhinge}
\end{pspicture}

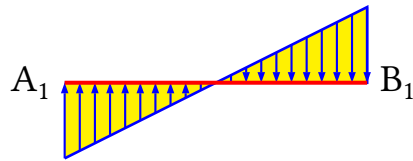
```

4 Antisymmetric load

```

\FPmessagesfalse
\def\retta#1#2{#1 x mul #2 add}
\def\rettaTeX#1#2{%
  \multido{\nStart=0.0+0.2}{21}{%
    \pnode(\nStart,0){E1}
    \FPeval{ValueRetta}{(#1)*(\nStart)+(#2)}
    \pnode(\nStart,ValueRetta){E2}
    \FPeval{Test}{abs(ValueRetta)-0.2}
    \FPifneg{Test}\psset{arrowsize=0}\else\psset{arrowsize=1mm}\fi
    \psline[linecolor=blue,arrowinset=0]{->}(E2)(E1)}}

```

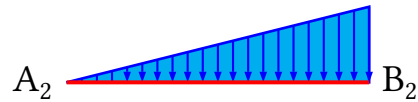


```

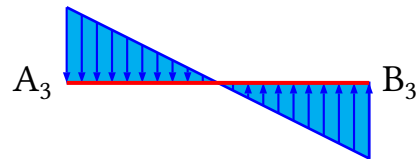
\begin{pspicture}(-1,-1.5)(5,1)
\pnode(0,0){A1}\pnode(4,0){B1}
\uput[180](A1){\Large A$_1$}\uput[0](B1){\Large B$_1$}
%-----
% Parameters
% #1 m = 0.5   y = m\AA^1x + n   (1)
% #2 n = -1
%----- line 1 -----
\pscustom[linecolor=blue,linewidth=1pt,fillstyle=solid,fillcolor=yellow]{
\psplot[linecolor=blue]{0}{4}{\retta{0.5}{-1}}
\psline(B1)(A1)}\rettaTeX{0.5}{-1}
\psline[linecolor=red,linewidth=1.5pt](A1)(B1) % Beam A1-B1
\end{pspicture}

```

5 Triangular load

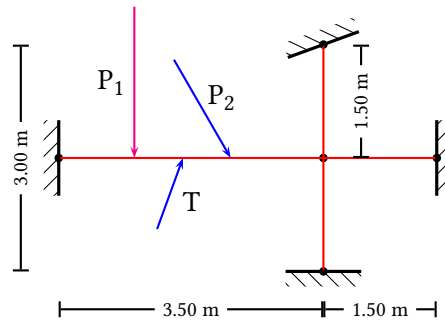


```
\begin{pspicture}(-1,-1)(5,1)
%-----
% Parameters
% #1 m = 0.25  y = m\tilde{x} + n (2)
% #2 n = 0
%----- line 2 -----
\node(0,0) {A2}
\node(4,0) {B2}
\uput[180](A2){\Large A$_2$}
\uput[0](B2){\Large B$_2$}
\pscustom[linecolor=blue,linewidth=1pt,fillstyle=solid,fillcolor=cyan]{
\psplot[linecolor=blue]{0}{4}{\retta{0.25}{0}}
\psline(B2)(A2)}
\rettaTeX{0.25}{0}
\psline[linecolor=red,linewidth=1.5pt](A2)(B2) % Beam A2-B2
\end{pspicture}
```



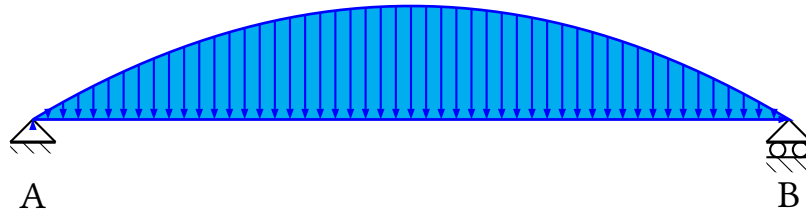
```
\begin{pspicture}(-1,-1)(5,1)
%-----
% Parameters
% #1 m = -0.5 y = m\tilde{x} + n (2)
% #2 n = 1
%----- line 2 ----- Triangular load -----
\node(0,0){A3}\node(4,0){B3}
\uput[180](A3){\Large A$_3$}\uput[0](B3){\Large B$_3$}
\pscustom[linecolor=blue,linewidth=1pt,fillstyle=solid,fillcolor=cyan]{
\psplot[linecolor=blue]{0}{4}{\retta{-0.5}{1}}
\psline(B3)(A3)}\rettaTeX{-0.5}{1}
\psline[linecolor=red,linewidth=1.5pt](A3)(B3) % Beam A3-B3
\end{pspicture}
```

6 Loads: Position and naming



```
\begin{pspicture}(-3,-2.5)(3,2)
% ----- KNOTS definition -----
\node(-2,0){A}\node(1.5,0){B}\node(1.5,-1.5){E}\node(1.5,1.5){F}\node(3,0){G}
\node(A) \node(E) \node(B) \node(F) \node(G)
% ----- Structure drawing and fixed ends position -----
\psline[linecolor=red](A)(G) \psline[linecolor=red](E)(F)
\rput{-90}{A}{\fixedend} % left FE
\rput{0}{E}{\fixedend} % bottom FE
\rput{-160}{F}{\fixedend} % top FE
\rput{90}{G}{\fixedend} % right FE
% ----- Loads: Position and naming -----
\psArrowCiv[RotArrows=0,length=2.0,start=0.286,%
  linecolor=magenta,OffsetLabel=-0.3](A)(B){\rput{90}{P$_1$}}
\psArrowCiv[RotArrows=30,length=1.5,start=0.65,%
  linecolor=blue,OffsetLabel=0.3](A)(B){\rput{60}{P$_2$}}
\psArrowCiv[RotArrows=-200,length=1.0,start=0.47,%
  linecolor=blue,OffsetLabel=-0.3](A)(B){\rput{-70}{T}}
% ----- Spans measures -----
\pcline [offset=-5mm]{|-|}(-2,-1.5)(1.5,-1.5)\lput*{:U}{\scriptsize 3.50 m}
\pcline [offset=-5mm]{|-|}(1.5,-1.5)(3,-1.5) \lput*{:U}{\scriptsize 1.50 m}
\pcline [offset=5mm]{|-|}(-2,-1.5)(-2,1.5) \lput*{:U}{\scriptsize 3.00 m}
\pcline [offset=0mm]{|-|}(2,0)(2,1.5) \lput*{:U}{\scriptsize 1.50 m}
\end{pspicture}
```

7 Distributed load

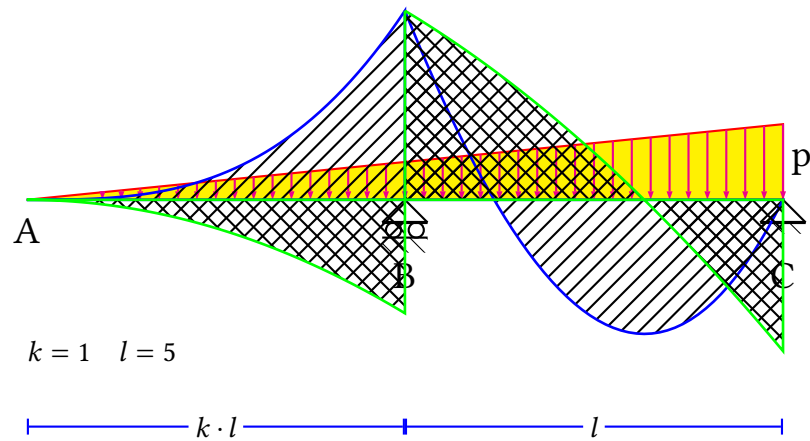


```

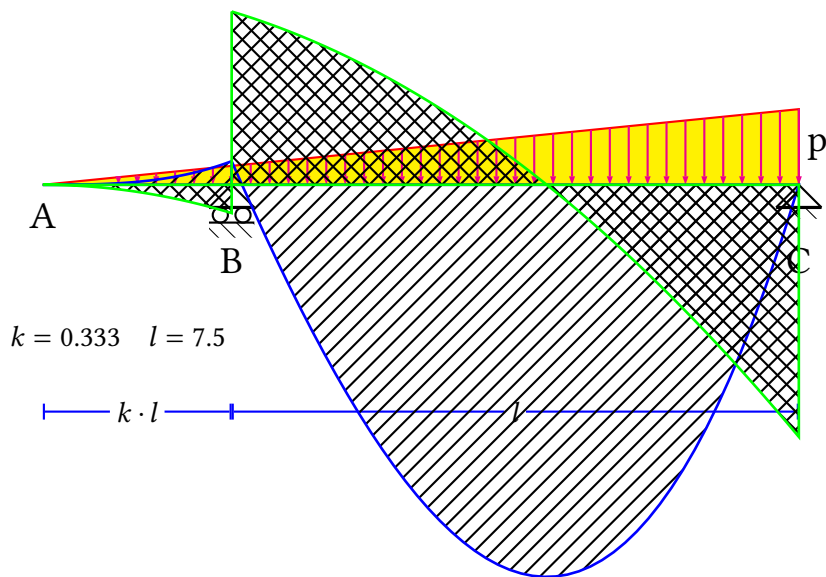
\def\BMdistributed#1#2#3{#2 x sub 0.5 #1 x mul mul mul #3 mul}
\begin{pspicture}(-1,-1.5)(11,2)
  \pnode(0,0){A}\pnode(10,0){B}
  \rput{0}{A}{\hinge}\rput{0}{B}{\roller}\rput(0,-1){\Large A}\rput(10,-1){\Large B}
  \psline[linecolor=blue](A)(B)
  %=====
  % Parameters
  % #1 q = 12
  % #2 l = 10
  % #3 scale factor =0.01: to be multiplied by (10/l)^2 (when l<> 10)
  %----- BM distributed load -----
  \pscustom[linecolor=blue,linewidth=1pt,fillstyle=solid,fillcolor=cyan]{
    \psplot[linecolor=blue]{0}{10}{\BMdistributed{12}{10}{0.01}}
    \psline[(10,0)(0,0)}
    \psset{arrowsize=1.5mm}
    \multido{\nStart=0.0+0.2}{51}{%
      \pnode(\nStart,0){E1}\pnode(! /x \nStart\space def x \BMdistributed{12}{10}{0.01}){E2}
      \psline[linecolor=blue,arrowinset=0,arrowsize=1mm]{->}(E2)(E1)}
  }
\end{pspicture}

```

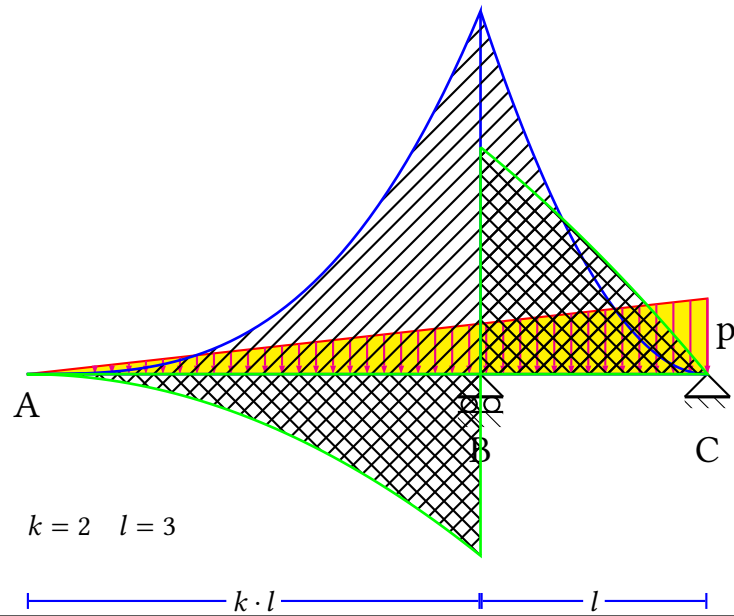

8 Macro \triload



```
\begin{pspicture}(-1,-3.5)(11,3)
% Total span is (K+1) times L, say AC=(K+1)*L [K=dimensionless value]
\triload[K=1,P=8,L=5] % k=1 -> AB=BC
% \triload[K=0.333,P=8,L=7.5] % k=1/3, like example 6
% \triload[K=2,P=8,L=3] % k=2 -> BM always NEGATIVE in the whole structure
% \triload[K=2.5,P=8,L=2] % k>2 -> Reaction in C downwards
\end{pspicture}
```



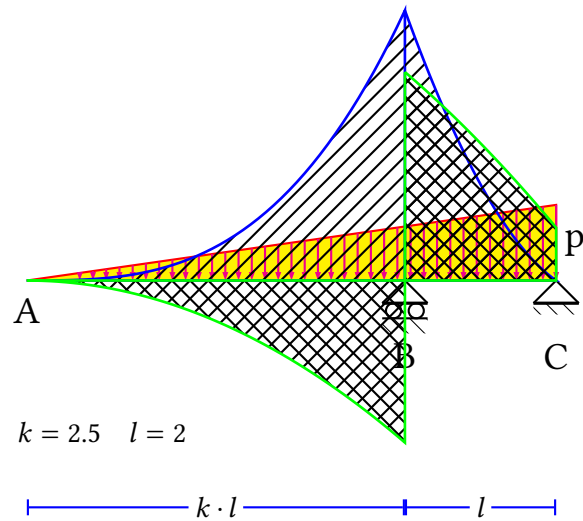
```
\begin{pspicture}(-1,-5.5)(11,2.5)
% \psgrid[subgriddiv=0,griddots=10,gridlabels=7pt,gridcolor=magenta]
% Total span is (K+1) times L, say AC=(K+1)*L [K=dimensionless value]
% \triload[K=1,P=8,L=5] % k=1 -> AB=BC
\triload[K=0.333,P=8,L=7.5] % k=1/3, like example 6
% \triload[K=2,P=8,L=3] % k=2 -> BM always NEGATIVE in the whole structure
% \triload[K=2.5,P=8,L=2] % k>2 -> Reaction in C downwards
\end{pspicture}
```



```

\begin{pspicture}(-1,-3)(11,5)
% \psgrid[subgriddiv=0,griddots=10,gridlabels=7pt,gridcolor=magenta]
% Total span is (K+1) times L, say AC=(K+1)*L [K=dimensionless value]
% -----
% \triload[K=1,P=8,L=5] % k=1 -> AB=BC
% \triload[K=0.333,P=8,L=7.5] % k=1/3, like example 6
\triload[K=2,P=8,L=3] % k=2 -> BM always NEGATIVE in the whole structure
% \triload[K=2.5,P=8,L=2] % k>2 -> Reaction in C downwards
% -----
\end{pspicture}

```

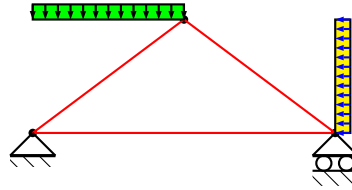


```

\begin{pspicture}(-1,-3)(11,4)
% \psgrid[subgriddiv=0,griddots=10,gridlabels=7pt,gridcolor=magenta]
% Total span is (K+1) times L, say AC=(K+1)*L [K=dimensionless value]
% -----
% \triload[K=1,P=8,L=5] % k=1 -> AB=BC
% \triload[K=0.333,P=8,L=7.5] % k=1/3, like example 6
% \triload[K=2,P=8,L=3] % k=2 -> BM always NEGATIVE in the whole structure
\triload[K=2.5,P=8,L=2] % k>2 -> Reaction in C downwards
% -----
\end{pspicture}

```

9 Non-symmetric superimposed dead load

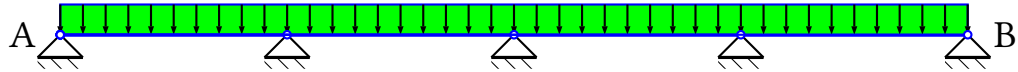


```

\begin{pspicture}(-3,-1)(3,2)
  \pnode(-2,0){A}\pnode(2,0){B}\pnode(0,1.5){V}\pnode(-2,1.5){A0}\pnode(2,1.5){B0}
  \node(A)\node(B)\node(V)
  \psline[linecolor=red](A)(V)(B)(A)
  \rput{0}{A}{\hinge} \rput{0}{B}{\roller}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%      Non-symmetric superimposed dead load
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\psframe[fillstyle=solid,fillcolor=green](-2,1.5)(0,1.7)
\psframe[fillstyle=solid,fillcolor=yellow](2,0)(2.2,1.5)
\multido{\nStart=0.0+0.0833}{13}{%
  \psArrowCivil[RotArrows=0,length=0.2,start=\nStart,linecolor=black](A0)(V){}
%      Lateral load (i.e. wind)
  \psArrowCivil[RotArrows=180,length=0.2,start=\nStart,linecolor=blue](B)(B0){}}
\end{pspicture}

```

10 Distributed load for all beams

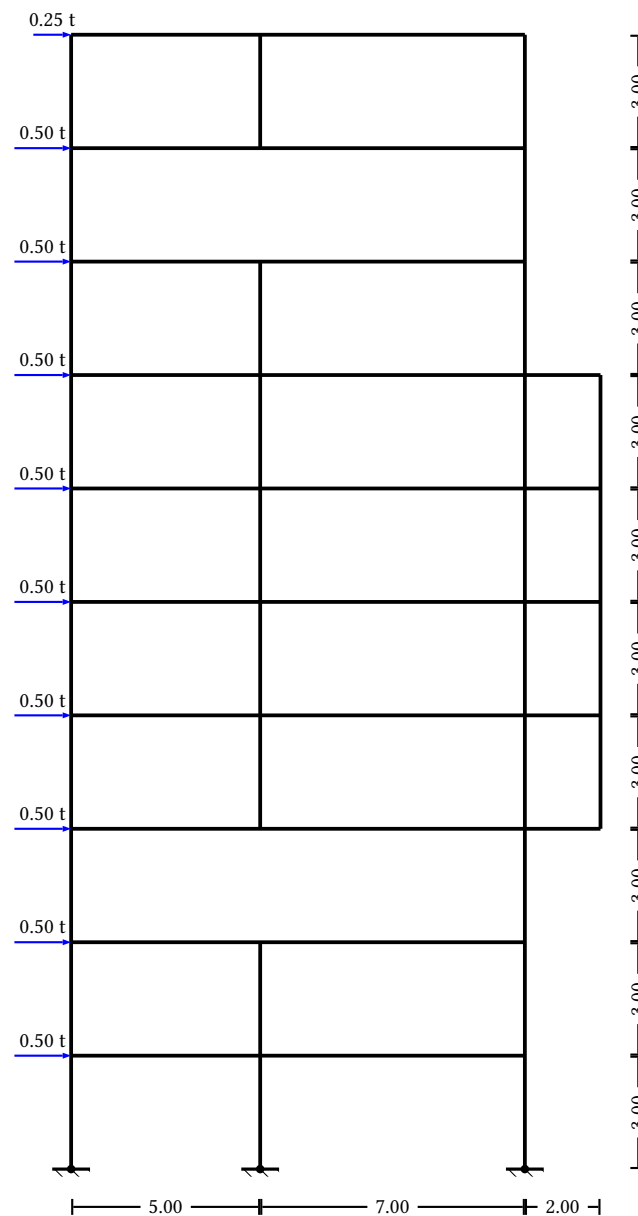


```

\begin{pspicture}(-1,-1)(13,1)
\pnode(0,0){A}\pnode(12,0){B}\pnode(12,0.4){B1}
\node (A) \rput(-0.5,0){\Large A} \rput(12.5,0){\Large B}
\psline[linecolor=blue,linewidth=1.5pt](A)(B) % join A-B
%-----
\psframe[linecolor=blue,fillcolor=green,fillstyle=solid](A)(B1)
%
% distributed load for all beams
\multido{\nBegin=0+0.025}{41}{%
\psArrowCivl[RotArrows=0,length=0.4,start=\nBegin,linecolor=black](A)(B){}}
%
% recursive routine
\multido{\rStart=0.00+3.00}{5}{%
\pnode(0,0){E1}\pnode(\rStart,0){E2}\rput{0}(E2){\hinge}
\psline[linecolor=blue,arrowinset=0,arrowsize=1mm]{o-o}(E1)(E2)}
\end{pspicture}

```

11 Distributed load for all beams



```

\psset{xunit=0.5cm,yunit=0.5cm} % Scaling
\begin{pspicture}(-3,-2)(16,32)
\psgrid[subgriddiv=0,griddots=10,gridlabels=7pt,gridcolor=magenta]
% ----- KNOTS definition -----
\node(0,0) {A0}\node(5,0) {B0} \node(12,0) {C0}
\node (A0) \node (B0) \node (C0)
\node(0,30) {A10} \node(5,30) {B10} \node(12,30) {C10}

%-----
\node(5,27) {B9}\node(5,24) {B8}
\node(5,6) {B2} \node(5,9) {B3}
%-----
\node(14,9) {D3} \node(14,12) {D4}
\node(14,15) {D5}\node(14,18) {D6}
\node(14,21) {D7}

```

```

%------
\pnode(0,27) {A9}\pnode(12,27) {C9}
\pnode(0,24) {A8}\pnode(12,24) {C8}
\pnode(0,21) {A7}\pnode(12,21) {C7}
\pnode(0,18) {A6}\pnode(12,18) {C6}
\pnode(0,15) {A5}\pnode(12,15) {C5}
\pnode(0,12) {A4} \pnode(12,12) {C4}
\pnode(0,9) {A3} \pnode(12,9) {C3}
\pnode(0,6) {A2} \pnode(12,6) {C2}
\pnode(0,3) {A1} \pnode(12,3) {C1}
%
% ----- Structure drawing and fixed ends position -----
\psline[linecolor=black,linewidth=0.05](A0)(A10)
\psline[linecolor=black,linewidth=0.05](C0)(C10)
%
\psline[linecolor=black,linewidth=0.05](B9)(B10)
\psline[linecolor=black,linewidth=0.05](B3)(B8)
\psline[linecolor=black,linewidth=0.05](B0)(B2)
%
\psline[linecolor=black,linewidth=0.05](A10)(C10)
\psline[linecolor=black,linewidth=0.05](A9)(C9)
\psline[linecolor=black,linewidth=0.05](A8)(C8)
\psline[linecolor=black,linewidth=0.05](A7)(D7)
\psline[linecolor=black,linewidth=0.05](A6)(D6)
\psline[linecolor=black,linewidth=0.05](A5)(D5)
\psline[linecolor=black,linewidth=0.05](A4)(D4)
\psline[linecolor=black,linewidth=0.05](A3)(D3)
\psline[linecolor=black,linewidth=0.05](A2)(C2)
\psline[linecolor=black,linewidth=0.05](A1)(C1)
%
\psline[linecolor=black,linewidth=0.05](D3)(D7)
\rput{0}{A0}{\fixedend} % bottom FE, column A
\rput{0}{B0}{\fixedend} % bottom FE, column B
\rput{0}{C0}{\fixedend} % bottom FE, column C
% ----- Loads: Position and naming -----
\psArrowCivil[RotArrows=90,length=1.0,start=0,%
    linecolor=blue,OffsetLabel=0.2](A10)(B10){\rput{0}{\scriptsize 0.25 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A9)(B9){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A8)(B8){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A7)(C7){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A6)(C6){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A5)(C5){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A4)(C4){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A3)(B3){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A2)(B2){\rput{0}{\scriptsize 0.50 t}}
\psArrowCivil[RotArrows=90,length=1.5,start=0,%
    linecolor=blue,OffsetLabel=0.2](A1)(C1){\rput{0}{\scriptsize 0.50 t}}
%
% ----- Spans measures -----

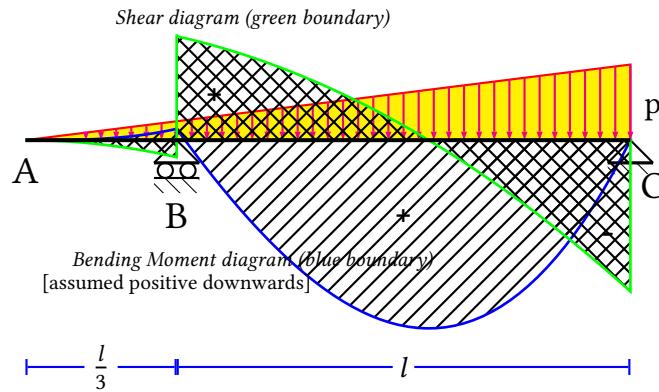
```

```

\pcline [offset=-0.5]{|-|}(0,0)(5,0) \lput*{:U}{\scriptsize 5.00}
\pcline [offset=-0.5]{|-|}(5,0)(12,0) \lput*{:U}{\scriptsize 7.00}
\pcline [offset=-0.5]{|-|}(12,0)(14,0) \lput*{:U}{\scriptsize 2.00}
%------
\pcline [offset=-0.5]{|-|}(14,0)(14,3) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,3)(14,6) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,6)(14,9) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,9)(14,12) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,12)(14,15) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,15)(14,18) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,18)(14,21) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,21)(14,24) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,24)(14,27) \lput*{:U}{\scriptsize 3.00}
\pcline [offset=-0.5]{|-|}(14,27)(14,30) \lput*{:U}{\scriptsize 3.00}
\end{pspicture}

```


12 Simple Beam with one overhang: triangular distributed load p



```

\begin{pspicture}(-1,-3.5)(9,1.5)
\pnode(0,0){A}\pnode(2,0){B}\pnode(8,0){C}
\rput{0}{C}{\hinge}\rput{0}{B}{\roller}
\psline[linecolor=red,fillcolor=yellow,fillstyle=solid](0,0)(8,0)(8,1)(0,0)
\multido{\nStart=1.00+0.025}{-37}{%
  \psArrowCivil[RotArrows=0,length=\nStart,start=\nStart,%
    linecolor=magenta](A)(C){}}
\rput(8.3,0.4){\large p} \rput(0,-0.4){\Large A}
\rput(2,-1){\Large B} \rput(8.3,-0.6){\Large C}
\pcline[offset=0,linecolor=blue]{|-|}(0,-3)(2,-3) \lput*{U}{\bfseries $\frac{l}{3}$}
\pcline[offset=0,linecolor=blue]{|-|}(2,-3)(8,-3) \lput*{U}{\bfseries $l$}
%%=====
% Parameters: #1 p = 6 #2 l = 6 #3 scale factor =0.15
%----- Bending Moment in span AB -----
\def\MflettAB#1#2#3{#1 #2 div -.125 mul x mul x mul x mul #3 mul neg}
\pscustom[linecolor=blue,linewidth=1pt,fillstyle=hlines]{
  \psplot[]{}{2}{\MflettAB{6}{6}{0.15}}\psline[(2,0)(0,0)]
%----- Shear in span AB -----
\def\TaglioAB#1#2#3{#1 #2 div -.375 mul x mul x mul #3 mul}
\pscustom[linecolor=green,linewidth=1pt,fillstyle=crosshatch]{
  \psplot[]{}{2}{\TaglioAB{6}{6}{0.15}}\psline[(2,0)(0,0)]
%----- Bending Moment in span BC -----
\def\MflettBC#1#2#3{#1 #2 div -.125 mul x mul x mul x mul
  #1 3.375 div #2 mul x mul add #1 10.125 div #2 mul #2 mul sub #3 mul neg}
\pscustom[linecolor=blue,linewidth=1pt,fillstyle=hlines]{%
  \psplot[]{}{8}{\MflettBC{6}{6}{0.15}}\psline[(8,0)(2,0)]
%----- Shear in span BC -----
\def\TaglioBC#1#2#3{#1 #2 div -.375 mul x mul x mul
  #1 3.375 div #2 mul add #3 mul}
\pscustom[linecolor=green,linewidth=1pt,fillstyle=crosshatch]{%
  \psplot[]{}{8}{\TaglioBC{6}{6}{0.15}}\psline[(8,0)(2,0)(2,1.4)]
%%=====
\psline[linewidth=1.5pt](0,0)(8,0) % Printing beam AC after diagrams BM/S
\rput(3,1.6){\em {\scriptsize Shear diagram (green boundary)}}
\rput(3,-1.6){\em {\scriptsize Bending Moment diagram (blue boundary)}}
\rput(2,-1.9){\scriptsize [assumed positive downwards]}
\rput(5,-1){\bfseries {\large +}} \rput(2.5,0.6){\bfseries {\large +}}
\rput(7.7,-1.3){\bfseries {\Large -}}
\end{pspicture}

```

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