

```

ClearAll[o, f, triple, bold, fs, bxOfa, dxa, dxb,
  bxOfaDa, bxOfaDb, p, p2, pa, pb, g, x, y, dx, pay, pbx]
o = {0, 0, 0};
f[x_, y_] = -4 + x^6 + 2 y^6;
triple[x_, y_] = {x, y, f[x, y]};
bold = Style[#, Bold] &;
fs = 14;
bxOfa = Style[Row[{bold[x], "(u, v)"}], FontSize → fs];
bxOfaDa = Style[Row[{bold[x], "(u + Δu, v)"}], FontSize → fs];
bxOfaDb = Style[Row[{bold[x], "(u, v + Δv)"}], FontSize → fs];

t = Style[#, FontSize → fs] &;
dx[v_, e_ : "", s_: ""] :=
  Row[{s // t, t["d"], Subscript[bold[x] // t, v // t], e // t}];
dxa = dx["u"];
dxb = dx["v"];

p = Plot3D[
  f[x, y], {x, 0, 2}, {y, 0, 2},
  PlotTheme → "ThickLines",
  Axes → None, Mesh → None, PlotStyle → Directive[Opacity[0.8]]
] ;

pay[l_, h_, a_] := ParametricPlot3D[triple[a, y], {y, l, h},
  PlotTheme → "ThickLines", PlotStyle → Directive[Green // Darker // Darker]];
pbx[l_, h_, b_] := ParametricPlot3D[triple[x, b], {x, l, h},
  PlotTheme → "ThickLines", PlotStyle → Directive[Green // Darker // Darker]];
pa = pay[0.5, 1.5, 0.5];
pb = pbx[0.5, 1.5, 0.5];
pah = pay[0.5, 1.5, 1.5];
pbh = pbx[0.5, 1.5, 1.5];

(*Callout doesn't appear to work for 3D plot*)
p2 = ListPointPlot3D[{
  (*Callout[lowlow,bxOfa, Above],
  Callout[highlow,bxOfaDa, Above],
  Callout[lowhigh,bxOfaDb, Above]*)}
  lowlow,
  highlow,
  lowhigh,
  o
},

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PlotStyle -> Directive[Black, PointSize[Large]]
] ;

low = 0.5;
high = 1.5;
lowlow = triple[low, low];
lowhigh = triple[low, high];
highlow = triple[high, low];
highhigh = triple[high, high];
g = Show[p, p2, pa, pb,
Graphics3D[{
  Thick, Arrowheads[0.001],
  Arrow[{o, lowlow}],
  Arrow[{o, highlow}],
  Arrow[{o, lowhigh}],
  Blue // Darker,
  (*Arrowheads[0.01],*)
  Arrow[{lowlow, triple[0.5, 0.9]}],
  Arrow[{lowlow, triple[0.9, 0.5]}],
  Text[bx0fa, lowlow + {-1, 1, 0.1} 0.2],
  Text[bx0faDa, highlow + {1, 1, 0} 0.3],
  Text[bx0faDb, lowhigh + {1, 1, 0} 0.3],
  Text[dxb, triple[0.5, 0.9] + {1, 0, 0} 0.15],
  Text[dxa, triple[0.9, 0.5] + {0, 1, 0} 0.15]
}]
]
]

peeters`exportForLatex["twoParameterDifferentialFig1", g]

g2 = Show[p, pa, pb, pah, pbh,
Graphics3D[{
  Thick, Arrowheads[0.001],

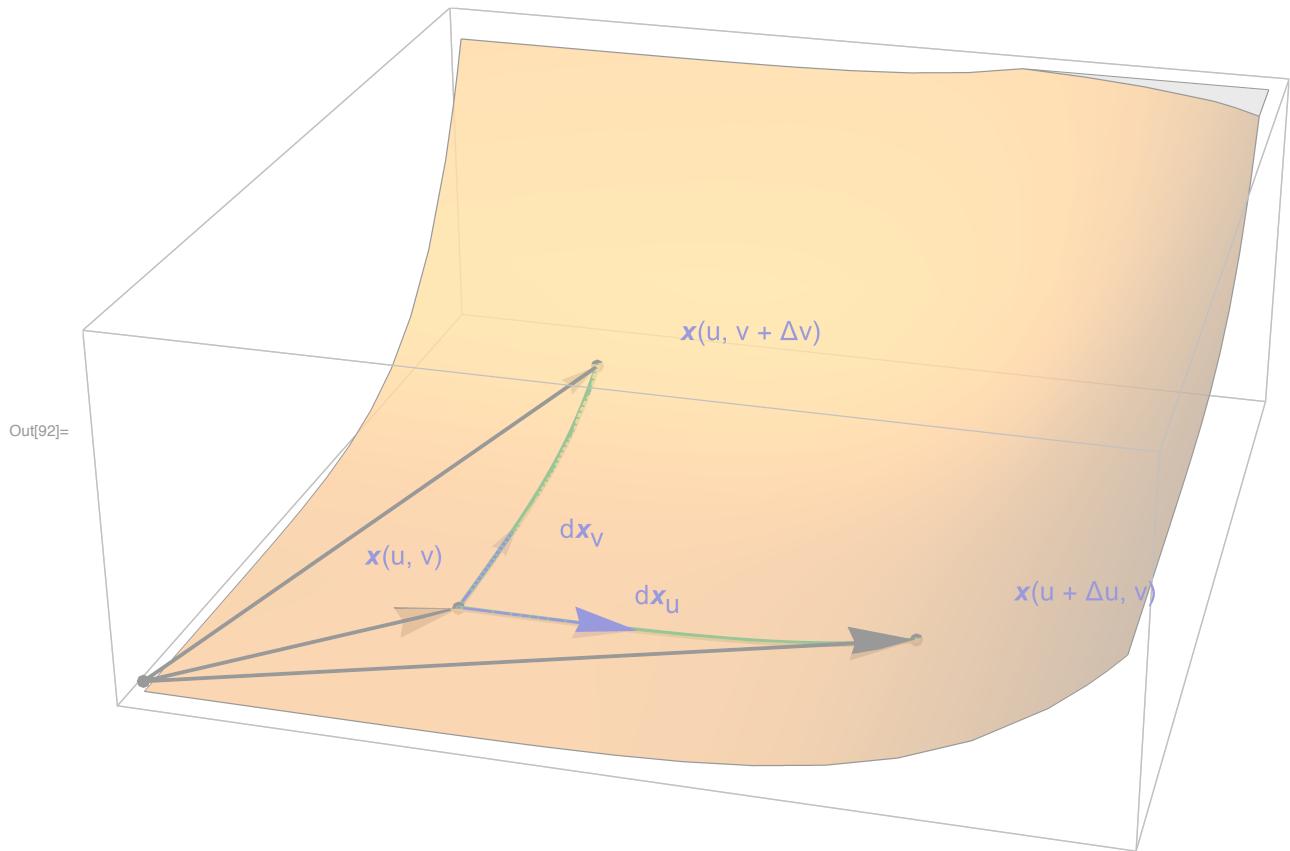
  Arrow[{lowhigh, triple[low + 0.3, high]}],
  Arrow[{highhigh, triple[high, high - 0.3]}],
  Arrow[{lowlow, triple[low, low + 0.3]}],
  Arrow[{highlow, triple[high - 0.3, low]}],

  Text[dx["u", "(v=1)"], triple[low + 0.3, high] + {0, 1, 0} 0.2],
  Text[dx["v", "(u=1)", "-"], triple[high, high - 0.3] - 0.3 {1, 0, 0}],
  Text[dx["v", "(u=0)", ""], triple[low, low + 0.3] + 0.3 {1, 0, 0}],
  Text[dx["u", "(v=0)", "-"], triple[high - 0.3, low] - 0.2 {0, 1, 0}]
}]
]

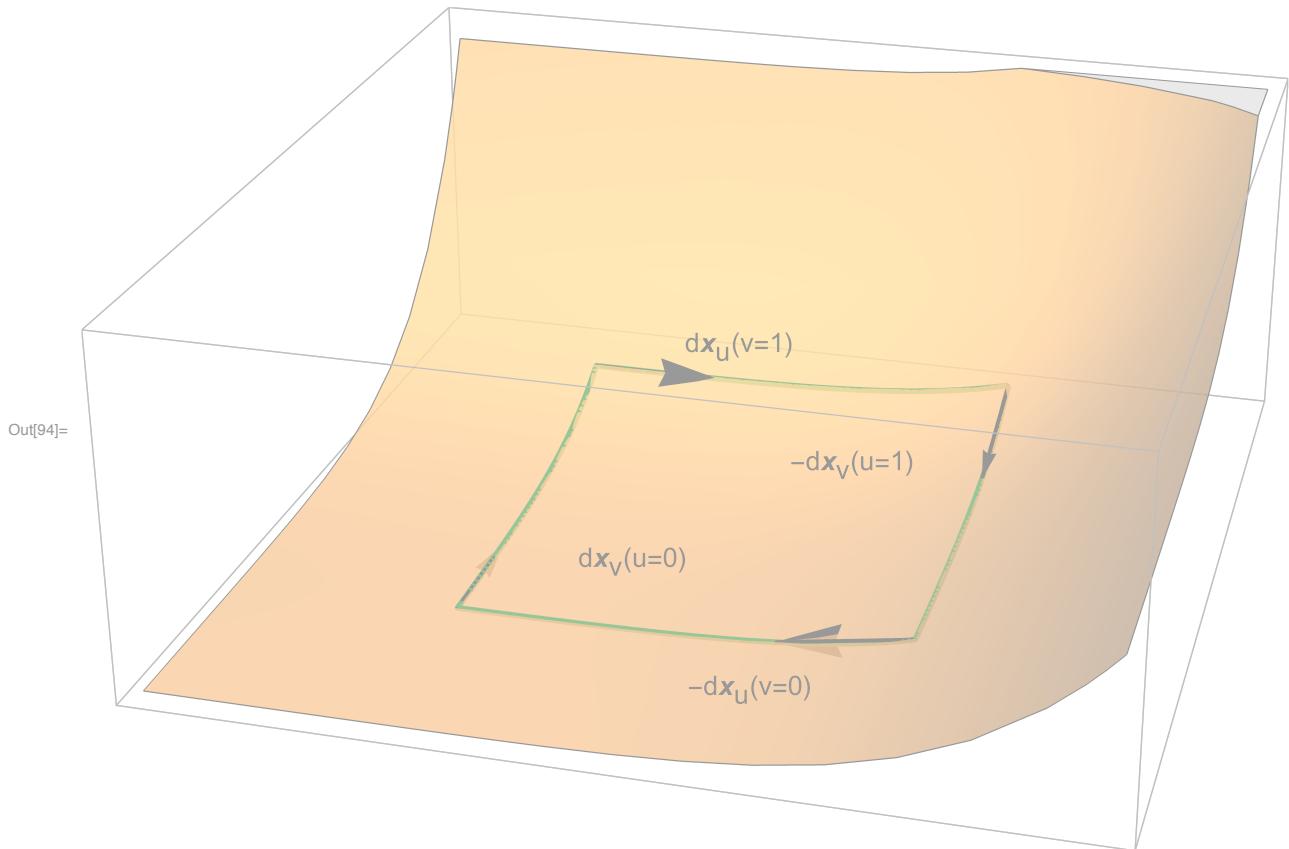
```

]

```
peeters`exportForLatex["twoParameterDifferentialBoundaryFig2", g2]
```



Out[93]= {twoParameterDifferentialFig1.eps, twoParameterDifferentialFig1pn.png}



Out[95]= {twoParameterDifferentialBoundaryFig2.eps,
twoParameterDifferentialBoundaryFig2pn.png}

In[1]:= << peeters` ;
peeters`setGitDir[".../project/figures"]
Out[2]= /Users/pjoot/project/figures