

```
(* export function for plot figures *)
<< peeters`
peeters`setGitDir[ "../project/figures/" ]
peeters`

/Users/pjoot/project/figures
```

Rework the manipulate for figure in reciprocal.tex

```
bold = Style[#, Bold] &;
(*â( â · b ) // FullForm
   â( â ^ b ) // FullForm*)
abold = bold["a"];
bbold = bold["b"];
tproj = Row[{OverHat[abold], "(", CenterDot[OverHat[abold], bbold], ")"}];
trej = Row[{OverHat[abold], "(", Wedge[OverHat[abold], bbold], ")"}];
```

```
Manipulate[
  DynamicModule[{bproj, brej, o, s, ao, to, acap, bcap},
    o = {0, 0};
    ao = {0, .15};
    s = 0;

    to[start_, end_, ss_ : s] = start + (end - start) (1 + ss / Norm[end - start]);
```

```
    acap = a / Norm[a];
    bcap = b / Norm[b];
    bproj = acap (acap.b);
    brej = b - bproj;
```

```
Graphics[{
  Thick
  , Arrow[{o, b}, ao]

  , Darker[Blue]
  , Arrow[{o, bproj}, ao]

  , Darker[Purple]
  , Arrow[{bproj, a}, ao]
```

```

, Darker[Red]
, Arrow[{bproj, b}, ao]

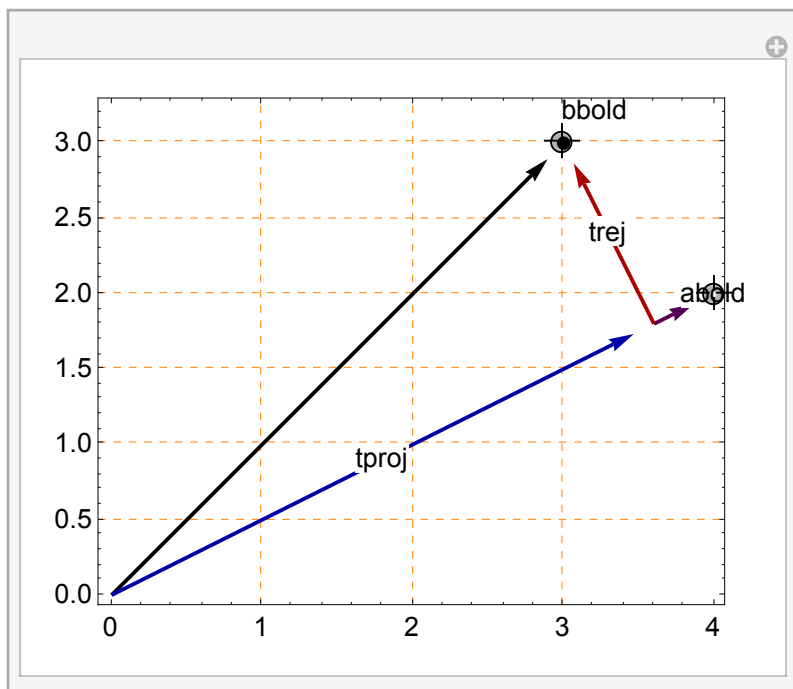
, Black
, PointSize[Large]
, Point[b]
, Text[bbold, to[o, b, 0.3], Background → White]
, Text[abold, to[o, a], Background → White]
, Text[tproj, to[o, bproj / 2], Background → White]
, Text[trej, to[bproj, bproj + brej / 2], Background → White]

}
, Frame → True
, GridLines → Automatic
, GridLinesStyle → Directive[Orange, Dashed]
, BaseStyle → 14 (* this changes the font, making it bigger *)
]

]
, {{a, {4, 2}}, Locator}
, {{b, {3, 3}}, Locator}

]

```



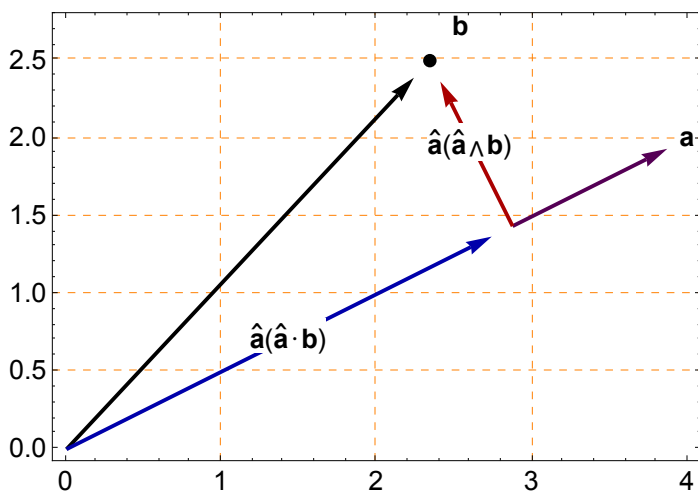
```

sn = DynamicModule[{a = {4, 2}, b = {2.338`, 2.5`}},
  DynamicModule[{bproj, brej, o, s, ao, to, acap, bcap}, o = {0, 0};
    ao = {0, 0.15`};
    s = 0;

    to[start_, end_, ss_ : s] = start + (end - start)  $\left(1 + \frac{ss}{\text{Norm}[end - start]}\right)$ ;

    acap =  $\frac{a}{\text{Norm}[a]}$ ;
    bcap =  $\frac{b}{\text{Norm}[b]}$ ;
    bproj = acap acap.b;
    brej = b - bproj;
    Graphics[{Thick, Arrow[{o, b}, ao], Darker[Blue], Arrow[{o, bproj}, ao], Darker[
      Purple], Arrow[{bproj, a}, ao], Darker[Red], Arrow[{bproj, b}, ao], Black,
      PointSize[Large], Point[b], Text[bold, to[o, b, 0.3`], Background → White],
      Text[abold, to[o, a], Background → White], Text[tproj, to[o,  $\frac{bproj}{2}$ ],
        Background → White], Text[trej, to[bproj,  $bproj + \frac{brej}{2}$ ], Background → White]},
    Frame → True, GridLines → Automatic, GridLinesStyle →
      Directive[Orange, Dashed], BaseStyle → 14]]]

```



```

peeters`exportForLatex["projectionAndRejectionFig1", sn]
{projectionAndRejectionFig1.eps, projectionAndRejectionFig1pn.png}

```

(*Path*)

(*Directory[]*)