

# Structures Report

Reinaldo Zapata

## 1 Up (graphone)

sec:up

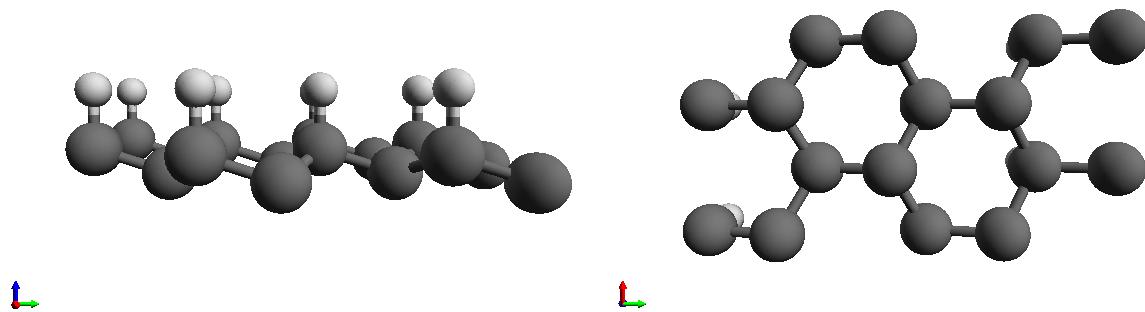


Figure 1: Up structure

fig:upstruc

### 1.1 $\mathcal{V}^{\text{xb}}$ energy range 0.0–0.2 eV

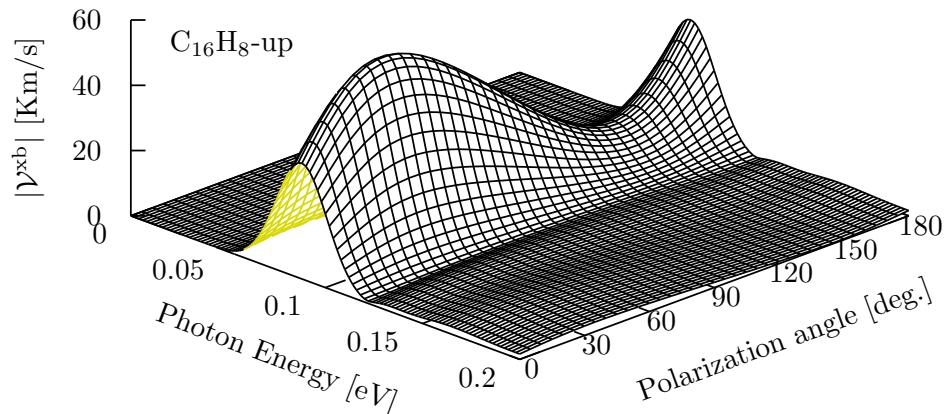


Figure 2: The most intense response for  $\mathcal{V}^{\text{xb}}$  is for 40°.

fig:up-magvxbincang1

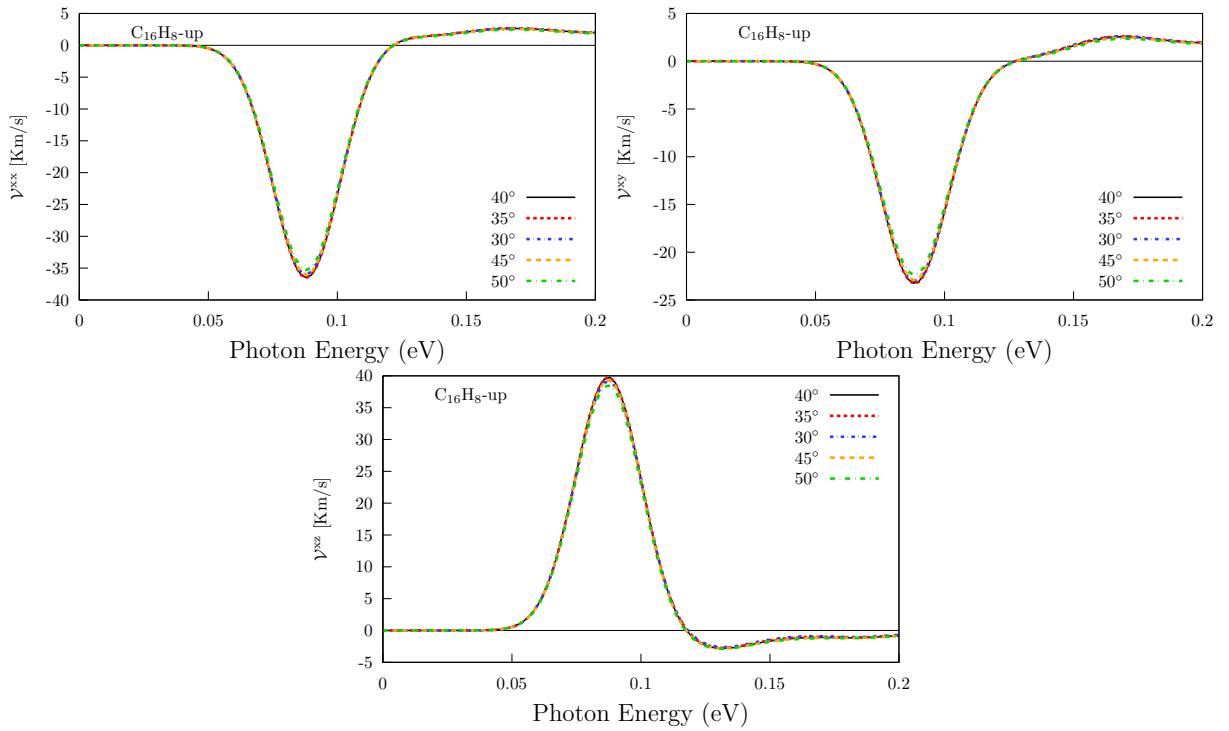


Figure 3: Cheking angle of incidence for  $xb$  components for up structure. [fig:up-xbangcomp](#)

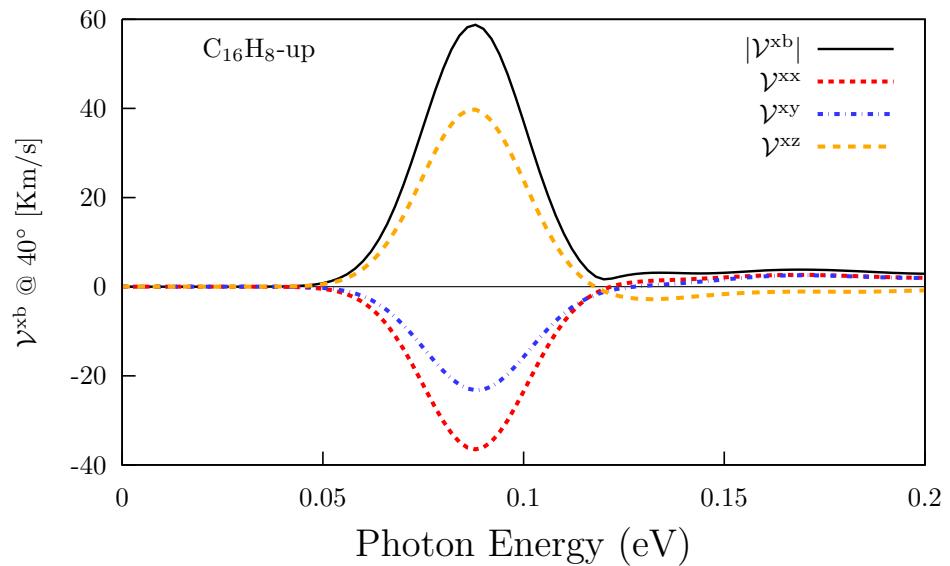


Figure 4: Three components of  $\mathcal{V}^{xb}$  @  $40^\circ$ . [fig:up-vxb1](#)

## 1.2 $\mathcal{V}^{yb}$ energy range 0.0–0.2 eV

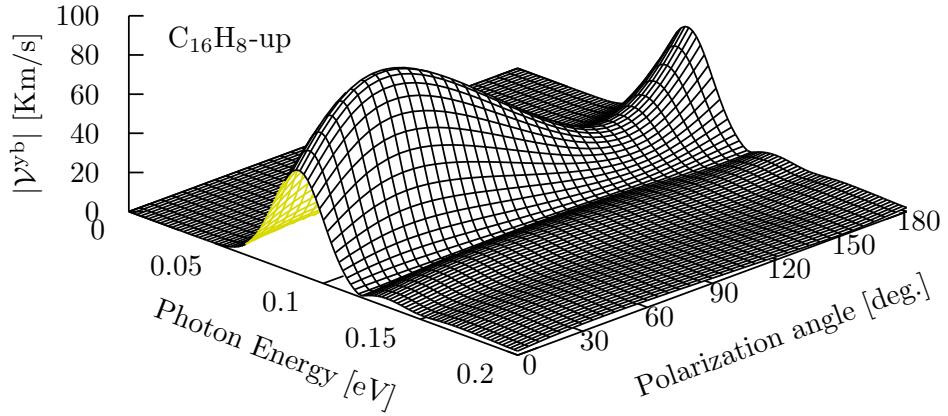


Figure 5: The most intense response for  $\mathcal{V}^{yb}$  is for  $40^\circ$ .

`fig:up-magvybincang1`

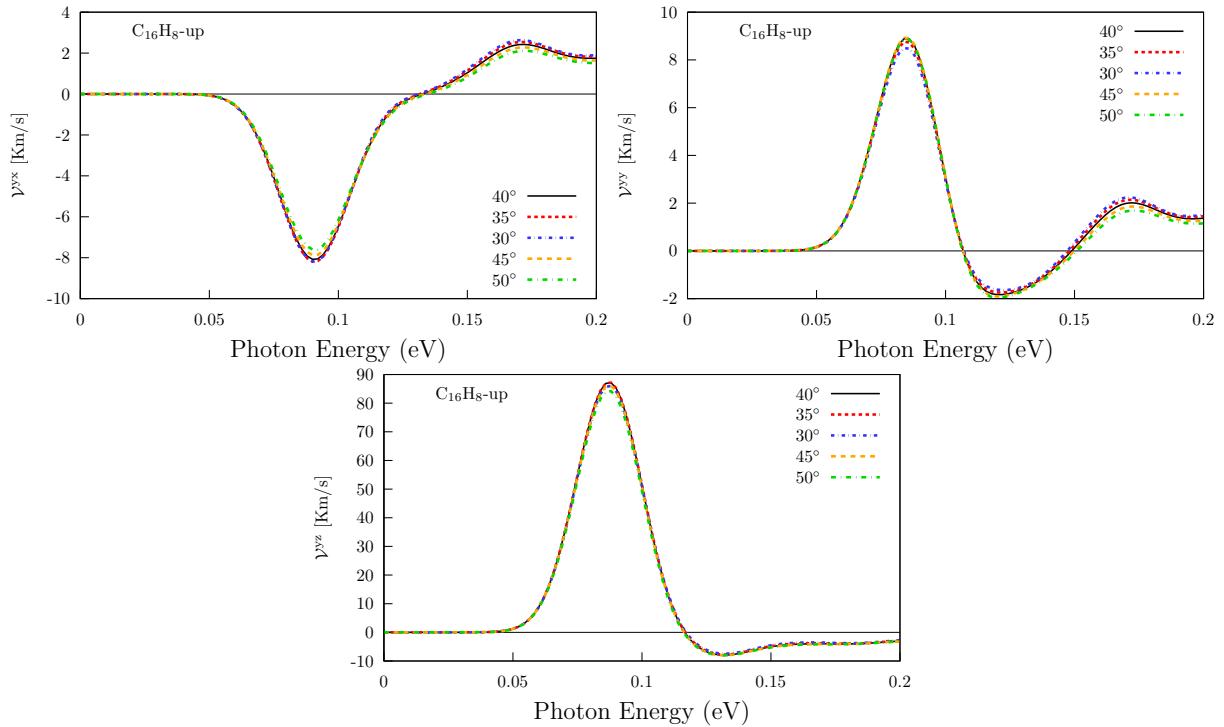
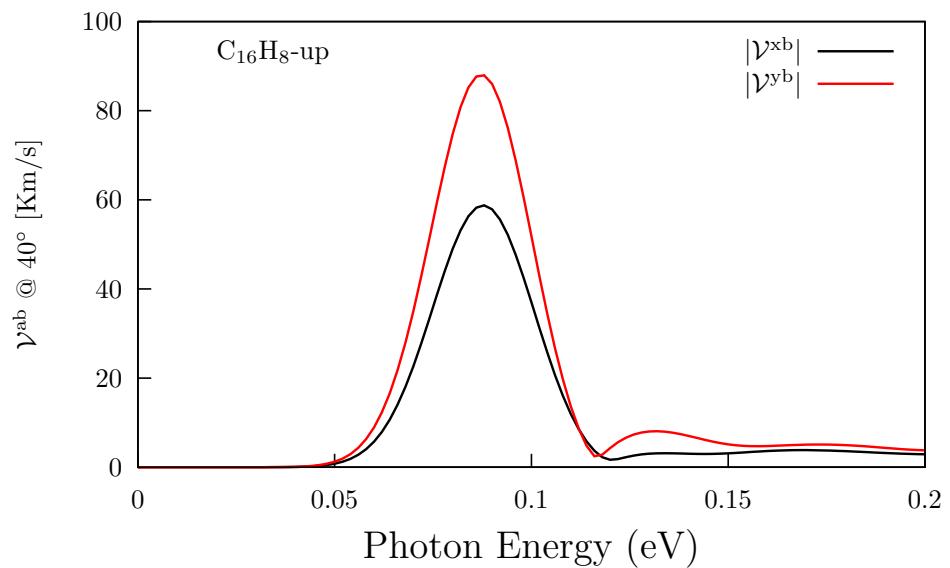
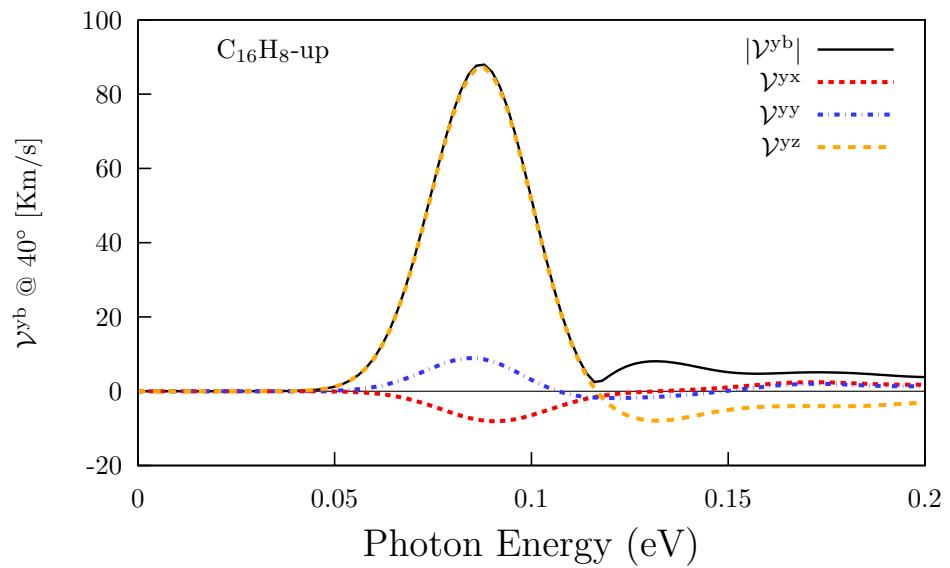


Figure 6: Cheking angle of incidence for  $yb$  components.

`fig:up-ybangcomp`



### 1.3 $\mathcal{V}^{xb}$ energy range 1.8–2.1 eV

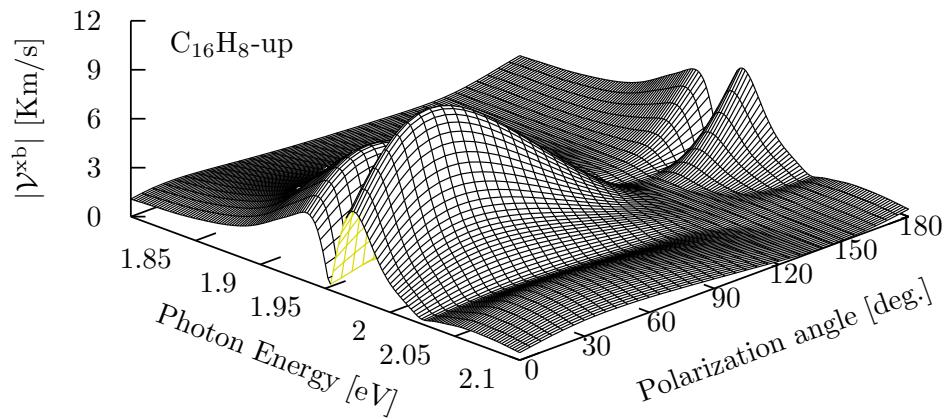


Figure 9: The most intense response for  $\mathcal{V}^{xb}$  is for  $40^\circ$ .

`fig:up-magxbincang2`

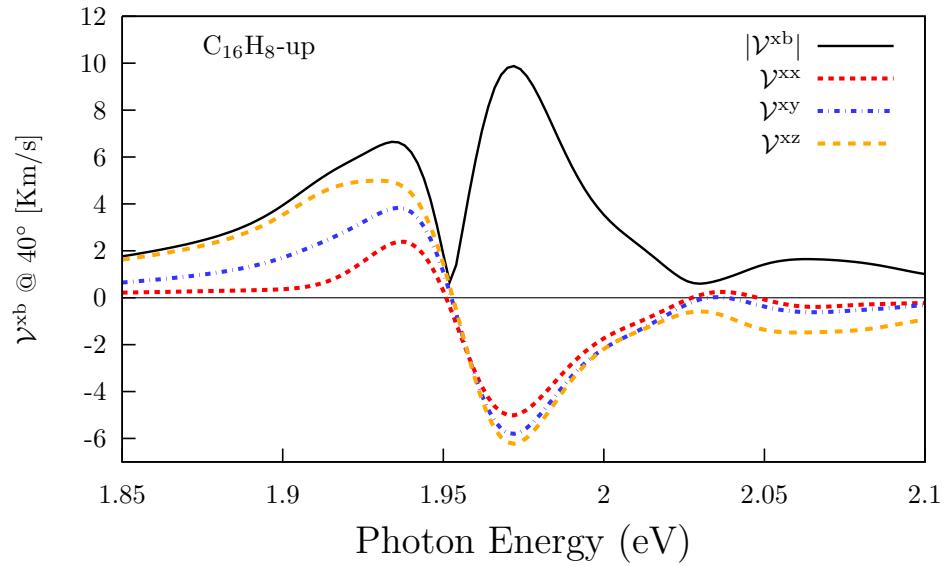


Figure 10: Three components of  $\mathcal{V}^{xb}$  @  $40^\circ$ .

`fig:up-vxb2`

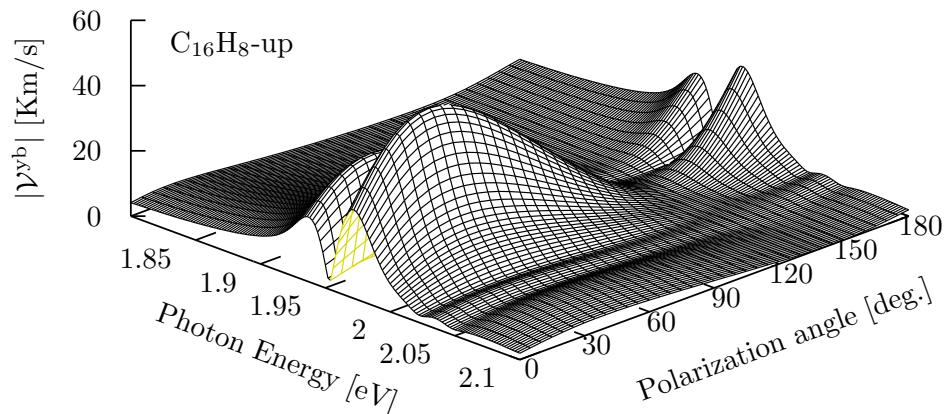


Figure 11: The most intense response for  $\mathcal{V}^{yb}$  is for 40°.

`fig:up-magybincang2`

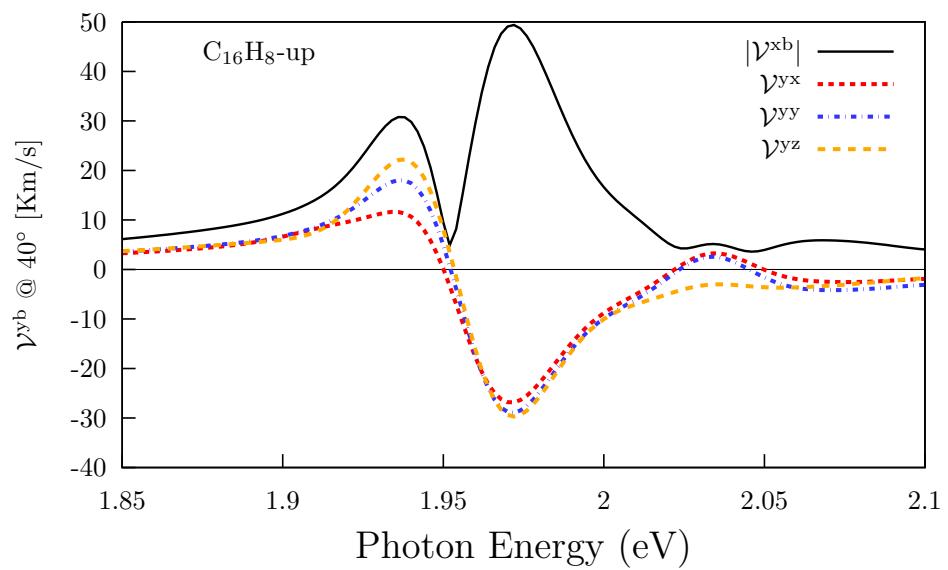


Figure 12: Three components of  $\mathcal{V}^{yb}$  @ 40°.

`fig:upvyb2`

**1.4  $|\mathcal{V}^{ab}|$ , angles  $\theta$  and  $\varphi$ , layers, and comparison with CdSe and GaAs for the energy range of 0.0–0.2 eV.**

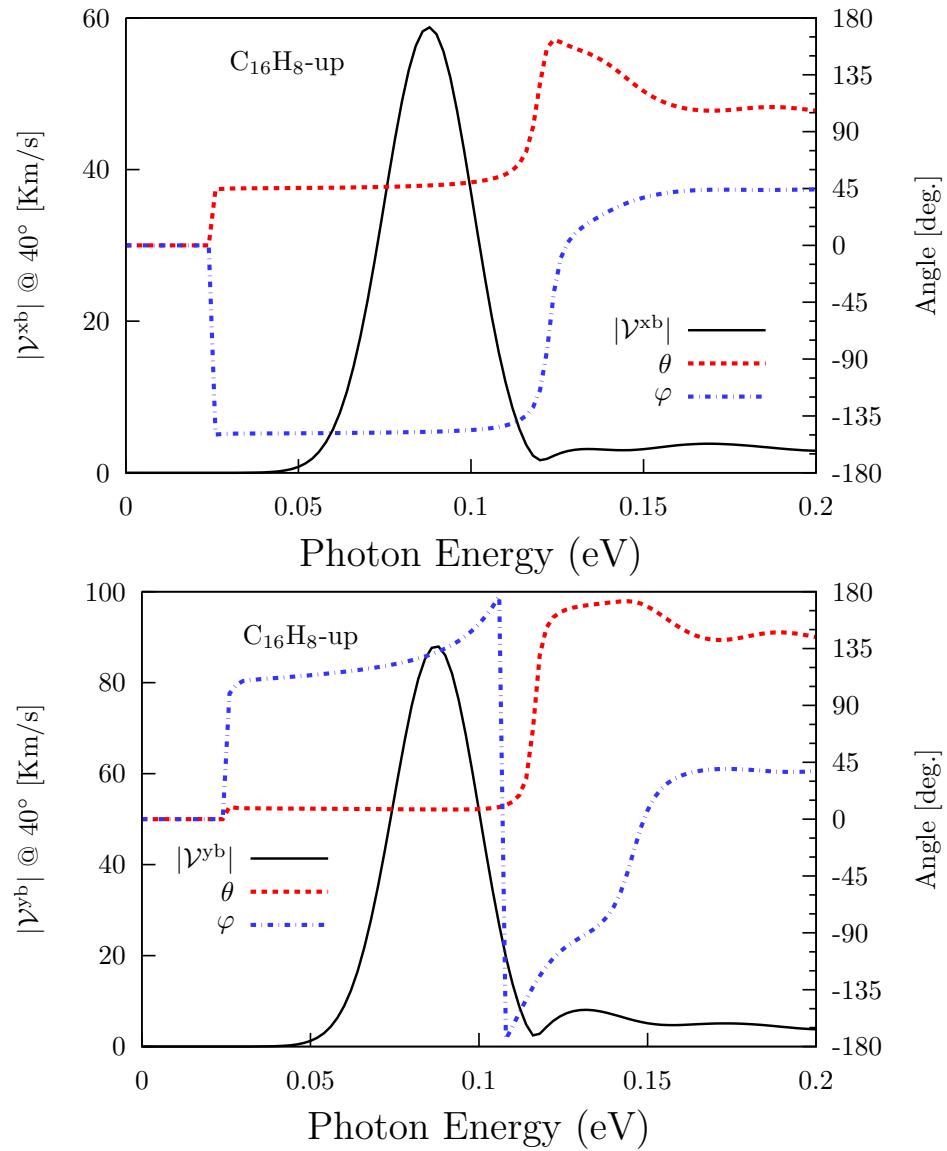


Figure 13:  $|\mathcal{V}^{ab}|$  (solid line, leftside scale) and the corresponding angles  $\theta$  and  $\varphi$  (dashed lines, rightside scale). Fig.13\_tp1

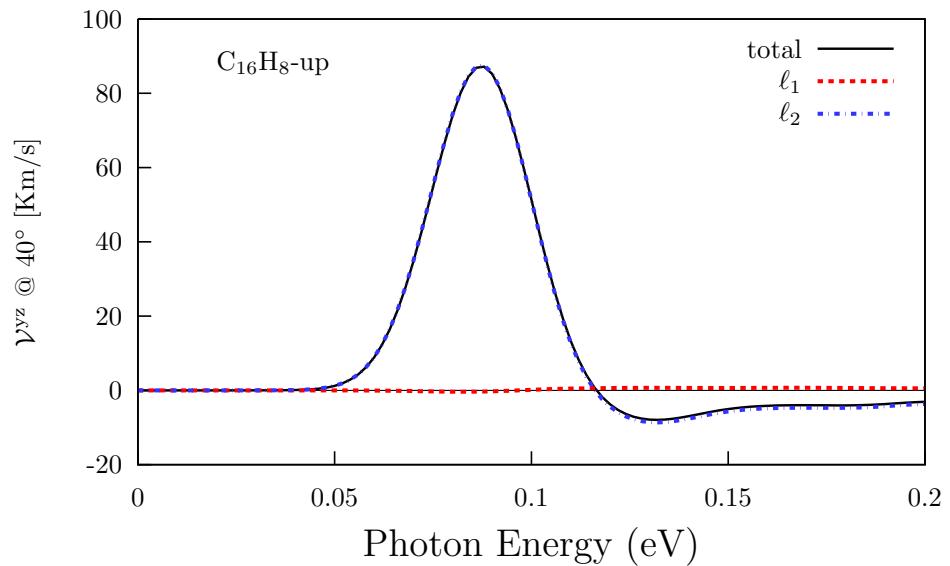


Figure 14: Layer decomposition for the most intense response:  $\mathcal{V}^{yz}$ .

`fig:up-lay1`

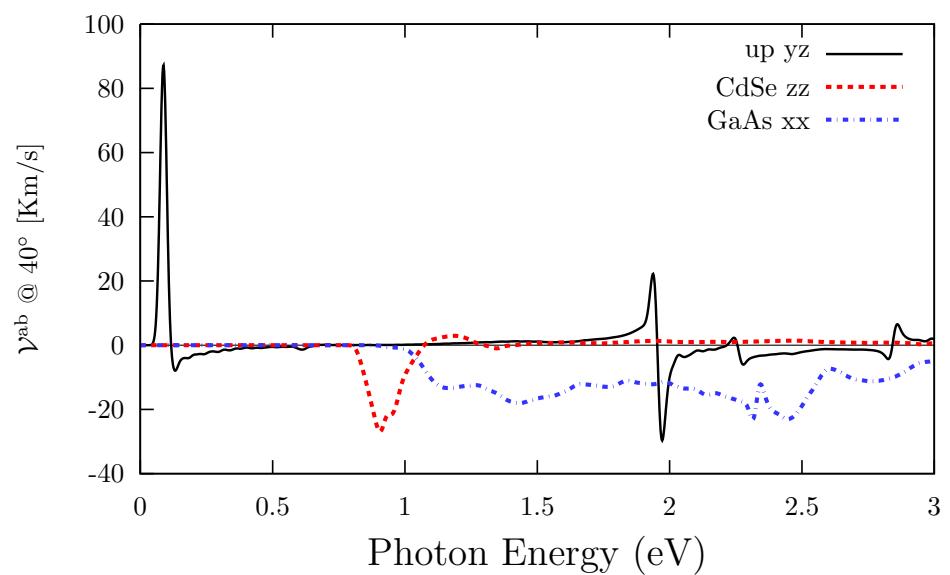


Figure 15: Comparissoin of the most intense response vs the most intense responses of CdSe and GaAs.

`fig:up-comp1`

1.5  $|\mathcal{V}^{ab}|$ , angles  $\theta$  and  $\varphi$ , layers, and comparison with CdSe and GaAs for the energy range of 1.8–2.1 eV

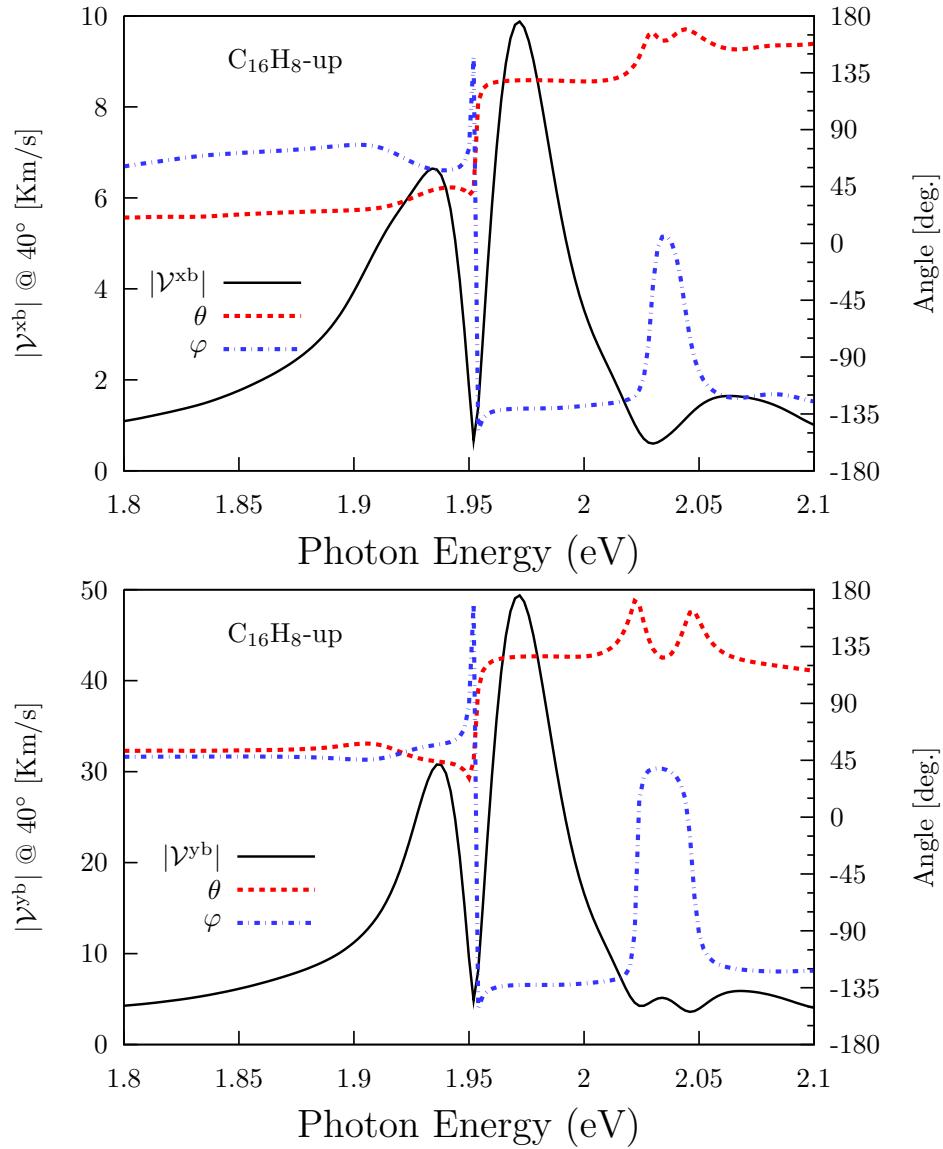


Figure 16:  $|\mathcal{V}^{ab}|$  (solid line, leftside scale) and the corresponding angles  $\theta$  and  $\varphi$  (dashed lines, rightside scale) for  $\text{C}_{16}\text{H}_8\text{-up}$ .

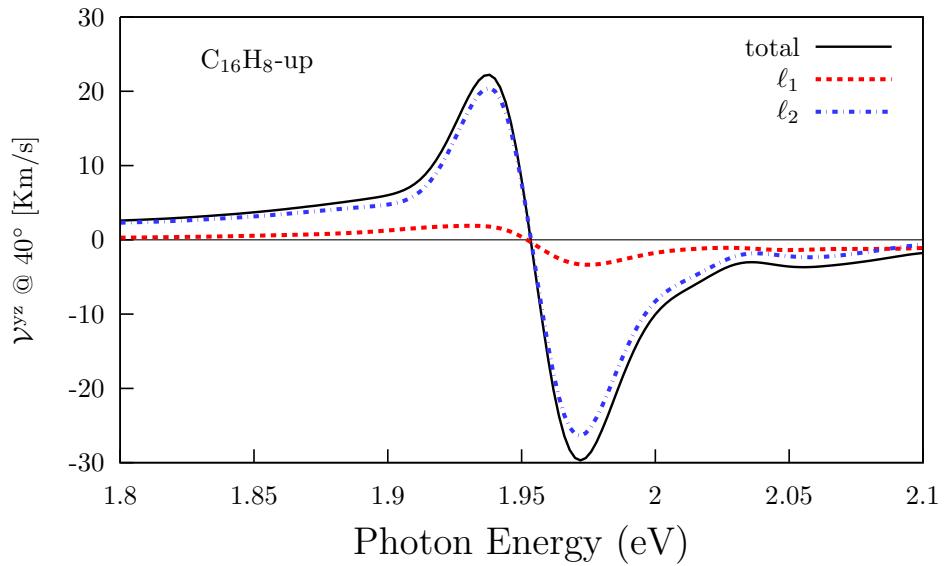


Figure 17: Layer decomposition for the most intense response:  $\mathcal{V}^{yz}$ .

`fig:up-lay2`

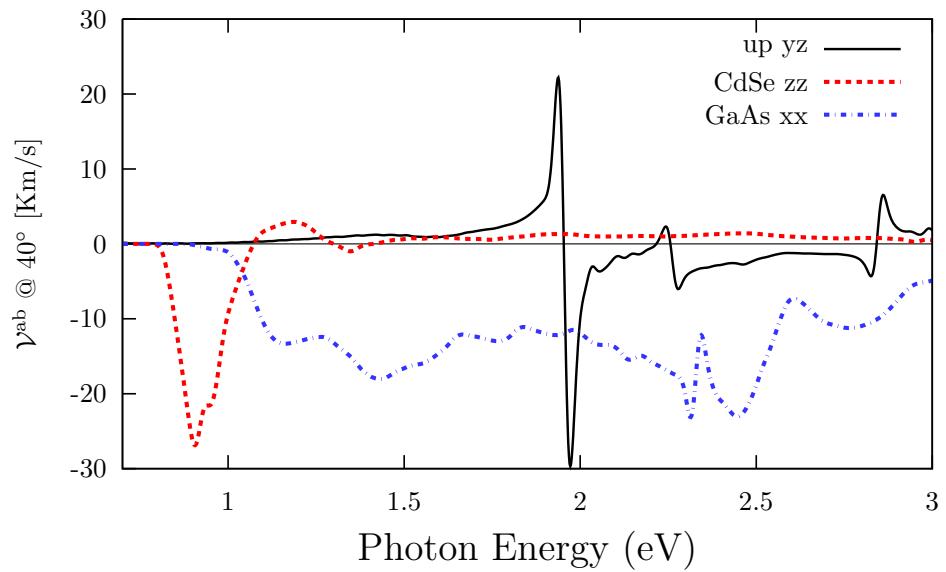
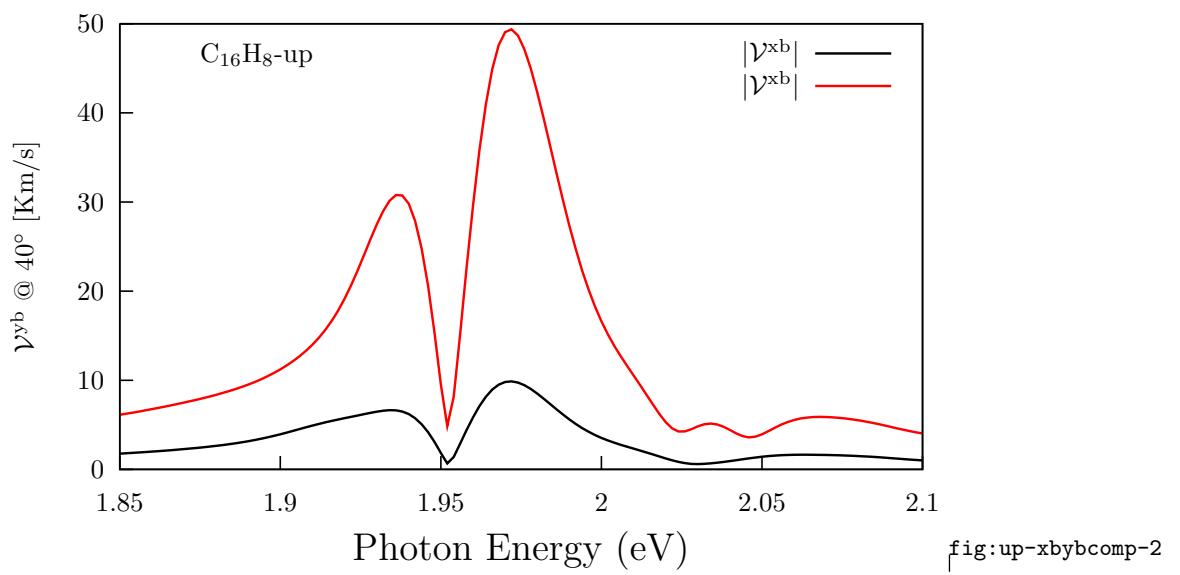


Figure 18: Comparissoin of the most intense response vs the most intense responses of CdSe and GaAs.

`fig:up-comp2`



## 2 alt

sec:alt

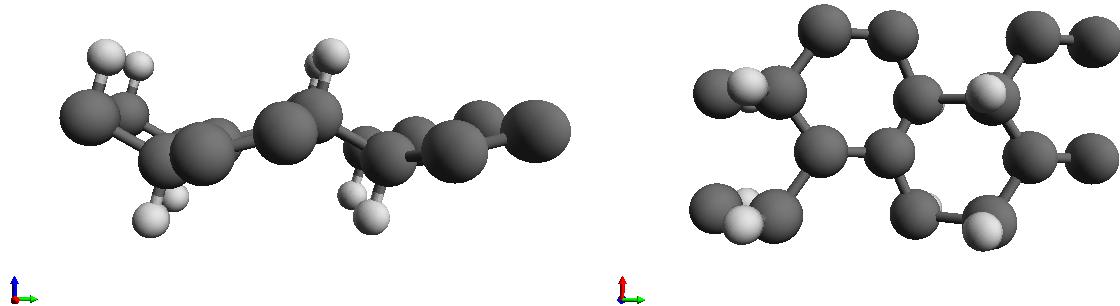


Figure 19: Alt structure.

fig:altstruc

### 2.1 $\mathcal{V}^{\text{xb}}$

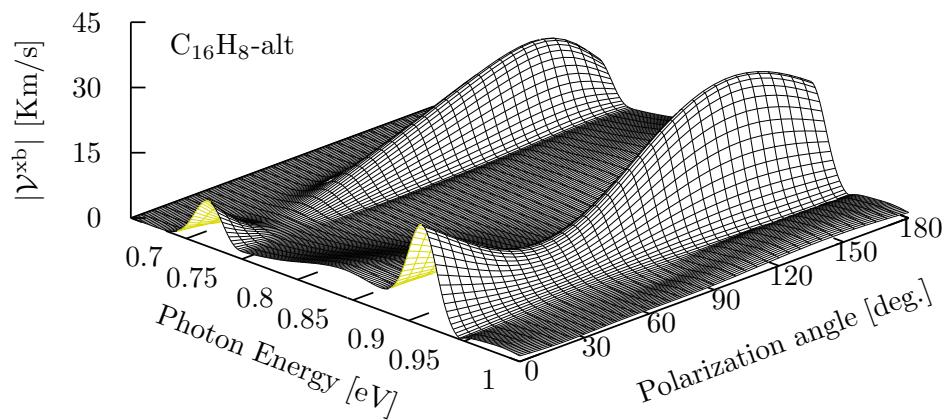


Figure 20: The most intense response for  $\mathcal{V}^{\text{xb}}$  is for 145°.

fig:alt-magvxbincang

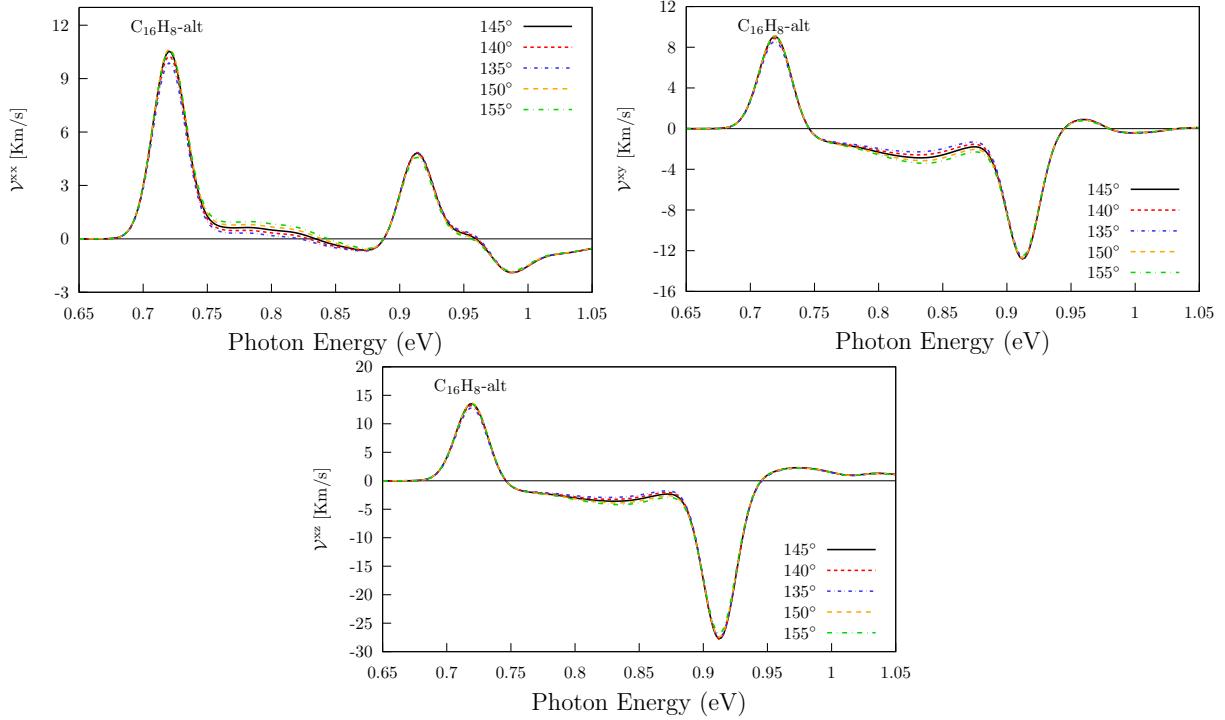


Figure 21: Cheking angle of incidence for  $xb$  components.

`fig:alt-xbangcomp`

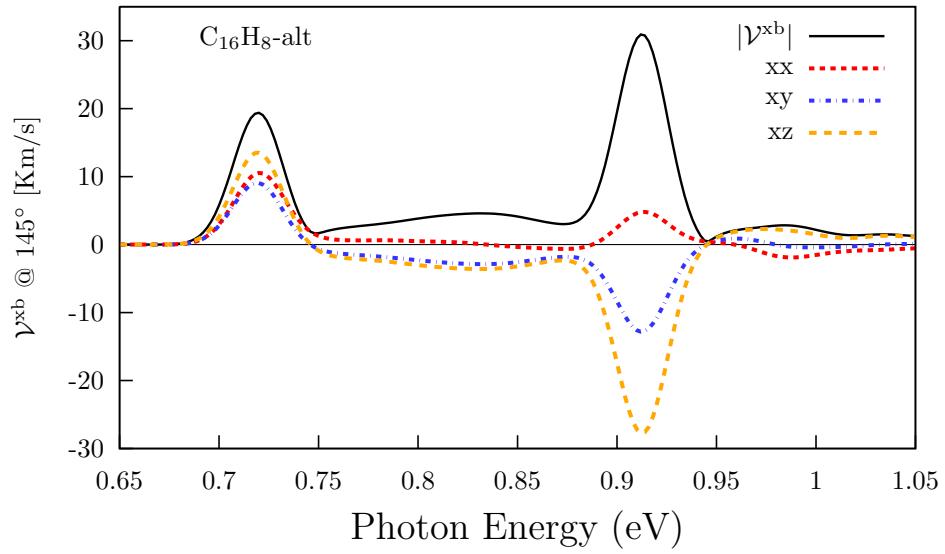


Figure 22: Three components of  $\mathcal{V}^{xb}$  @  $145^\circ$ .

`fig:alt-vxb1`

## 2.2 $\mathcal{V}^{yb}$

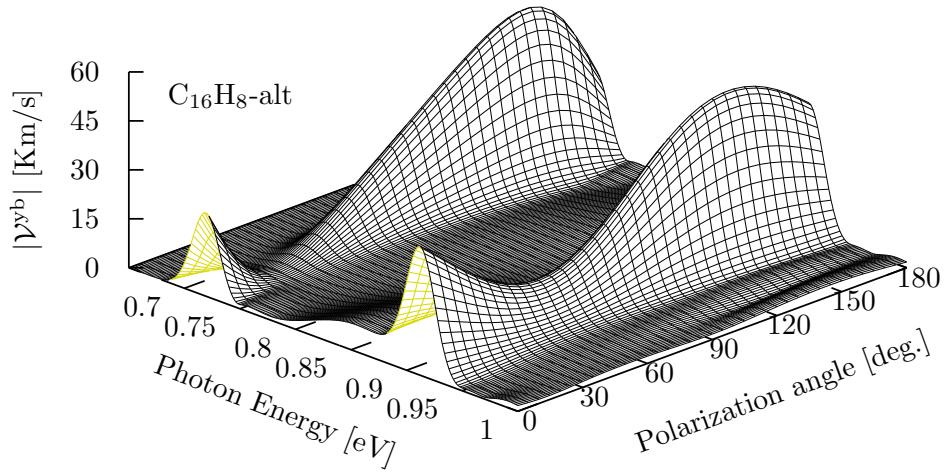


Figure 23: The most intense response for  $V^{yb}$  is for  $145^\circ$ .

`fig:alt-magvybincang1`

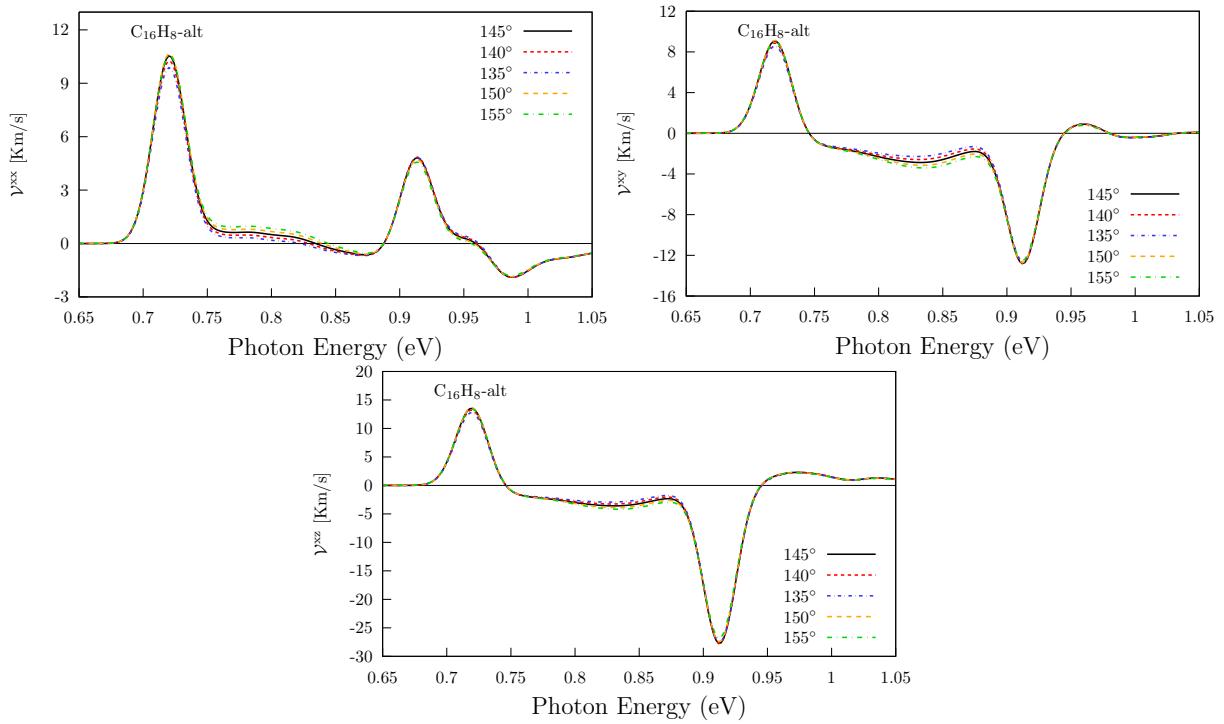


Figure 24: Cheking angle of incidence for  $yb$  components.

`fig:alt-ybangcomp`

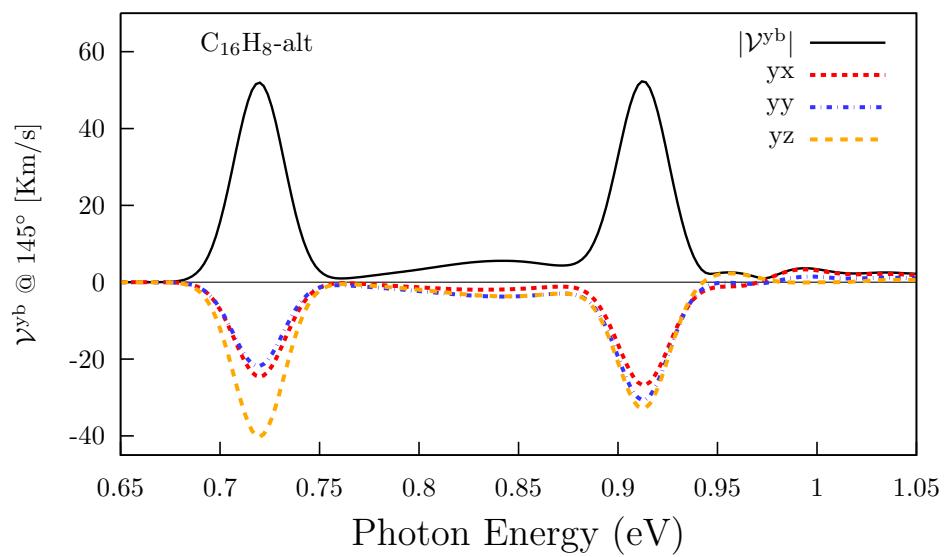


Figure 25: Three components of  $\mathcal{V}^{yb}$  @ 145°.

`fig:alt-vyb1`

### 2.3 $|\mathcal{V}^{ab}|$ , angles $\theta$ and $\varphi$ , layers, and comparison with CdSe and GaAs.

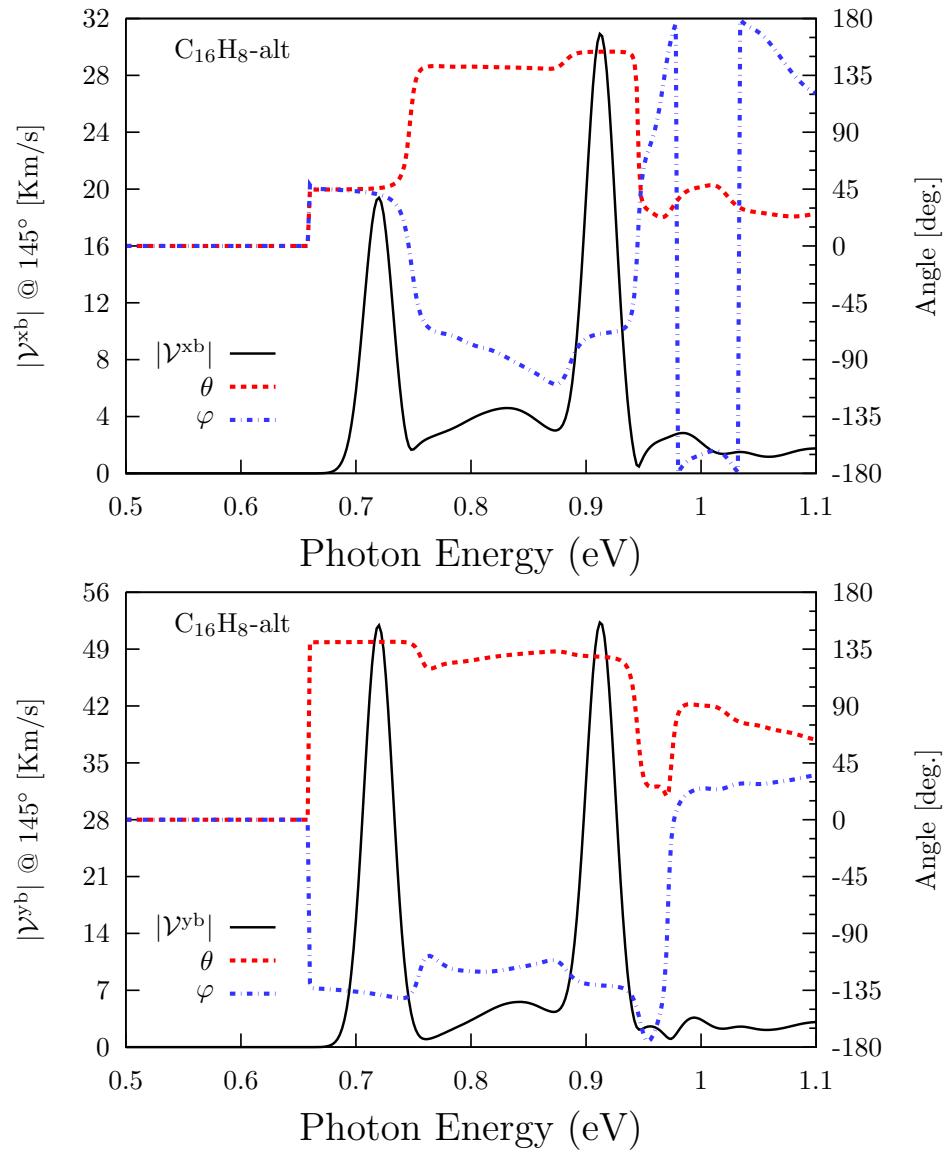


Figure 26:  $|\mathcal{V}^{ab}|$  (solid line, leftside scale) and the corresponding angles  $\theta$  and  $\varphi$  (dashed lines, rightside scale).

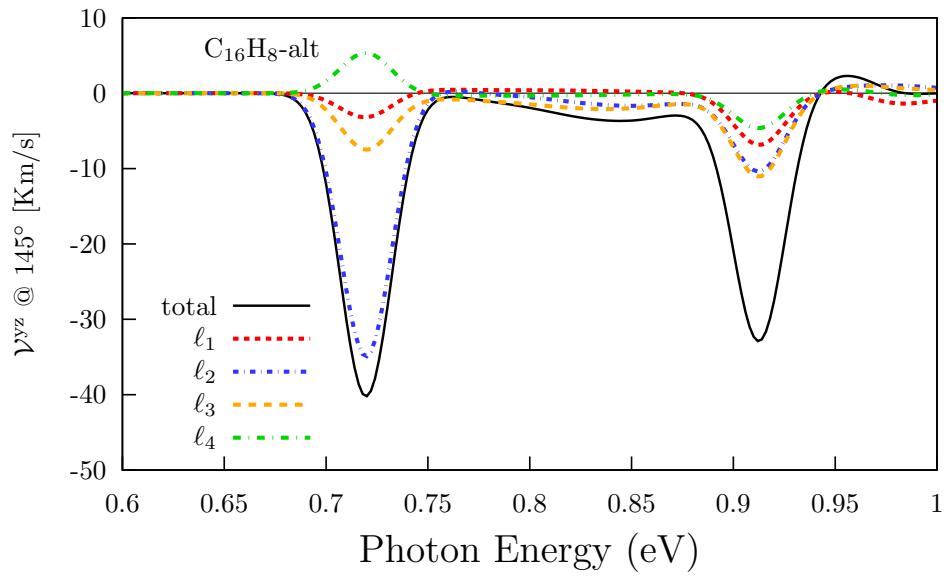


Figure 27: Layer decomposition for the most intense response:  $\mathcal{V}^{yz}$ .

fig:alt-lay

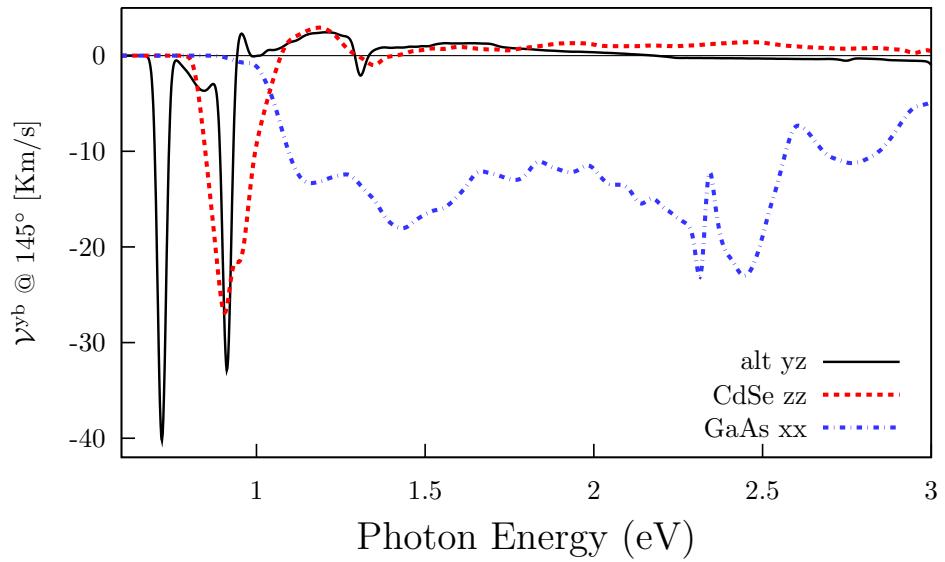


Figure 28: Comparissoin of the most intense response vs the most intense responses of CdSe and  $C_{16}H_8$ -alt.

fig:alt-comp

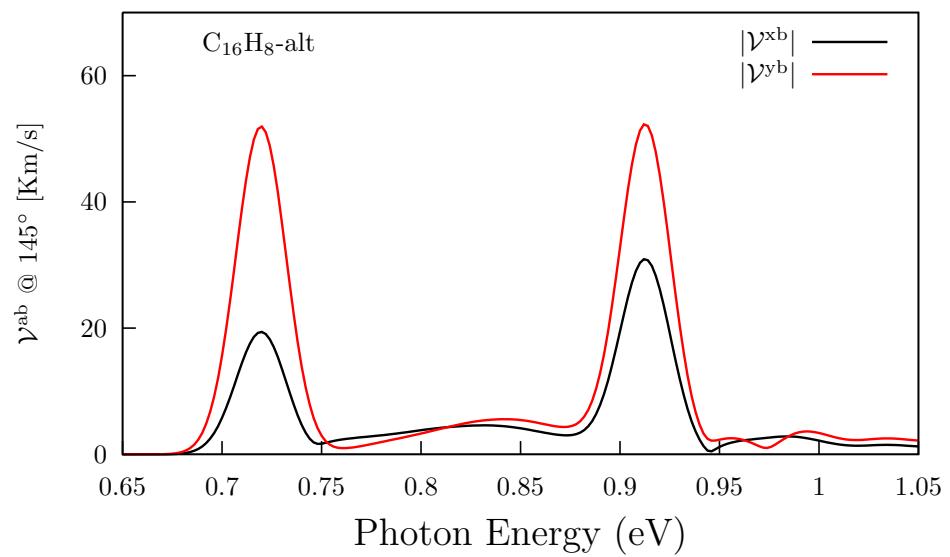


Figure 29: Comparisson of  $|\mathcal{V}^{xb}|$  and  $|\mathcal{V}^{yb}|$

`fig:alt-xbybcomp`

### 3 HN<sub>2</sub>C<sub>2</sub>H-aa

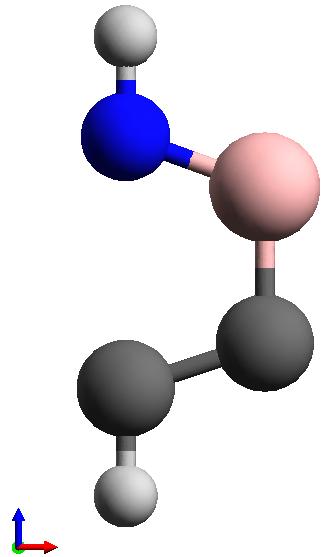


Figure 30: HN<sub>2</sub>C<sub>2</sub>H-aa structure

fig:aastruc

#### 3.1 $\mathcal{V}^{\text{xb}}$

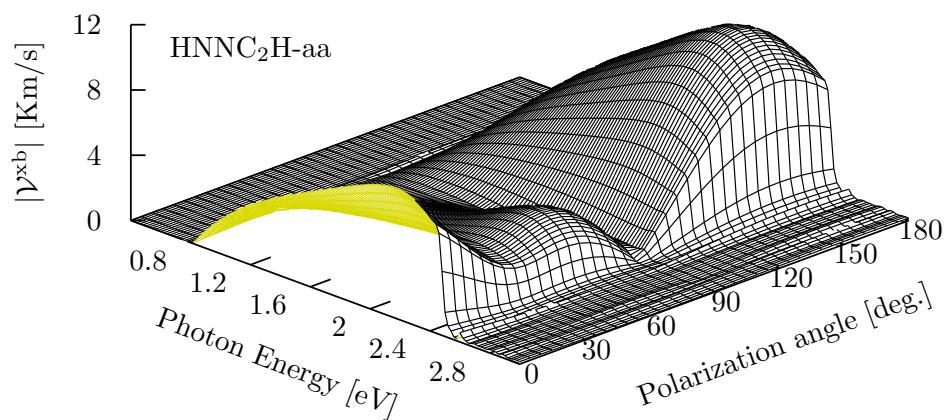


Figure 31: The most intense response for  $\mathcal{V}^{\text{xb}}$  is for  $155^\circ$ .

fig:aa-magvxbincang

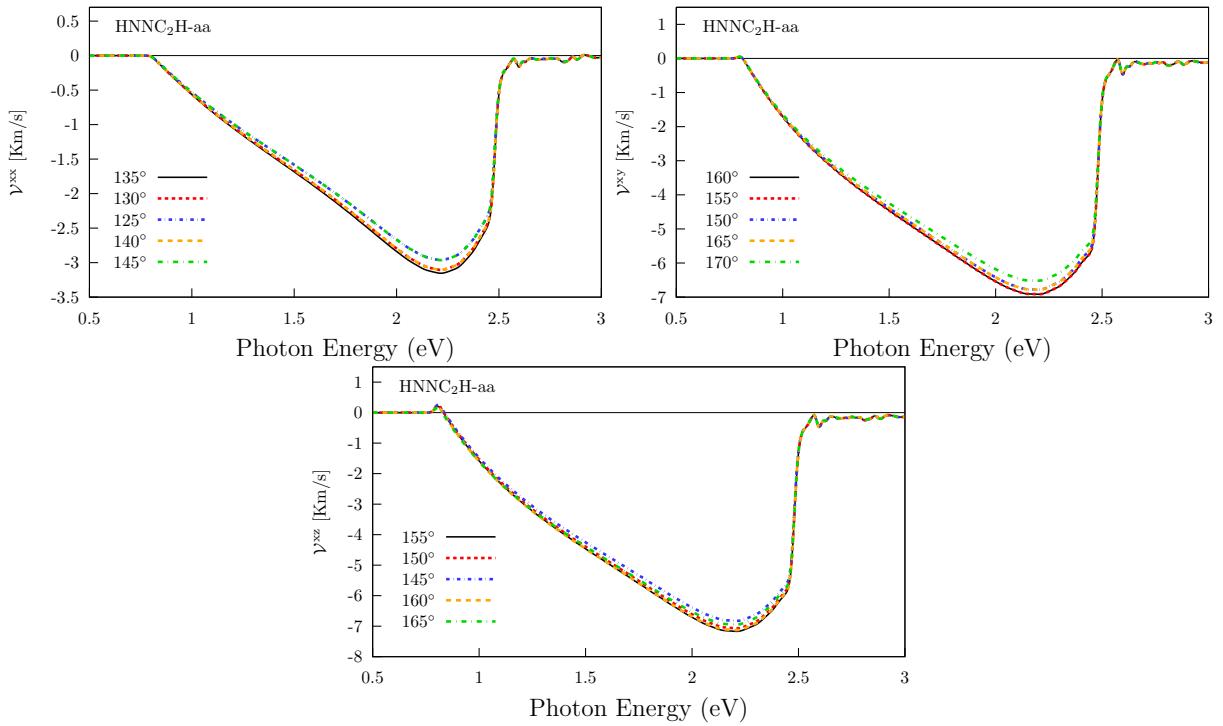


Figure 32: Cheking angle of incidence for  $xb$  components. There is a different angle for each component to have the most intense response.

`fig:aa-xbangcomp`

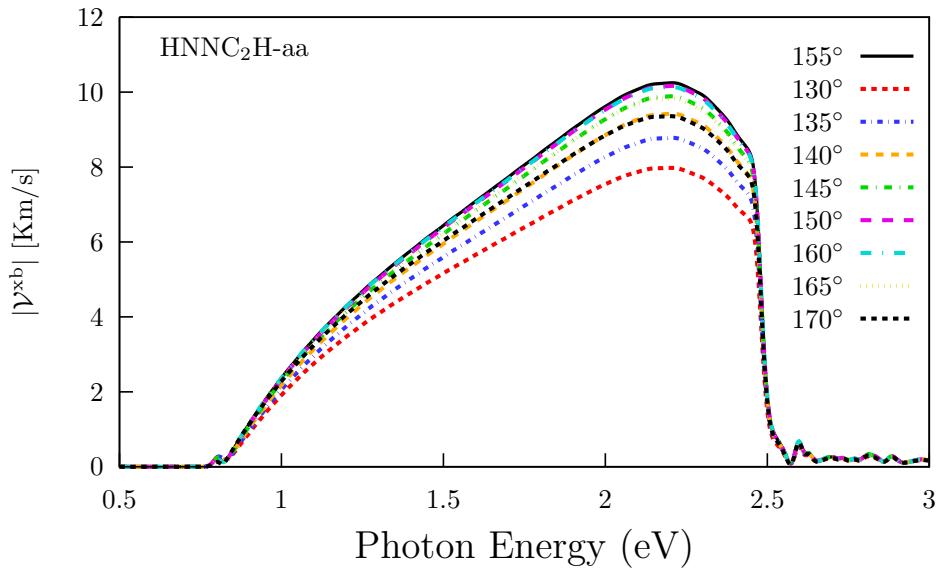


Figure 33: Comparissson of  $|V_{x^b}|$  for different polarization angles.

`fig:aa-magvxb`

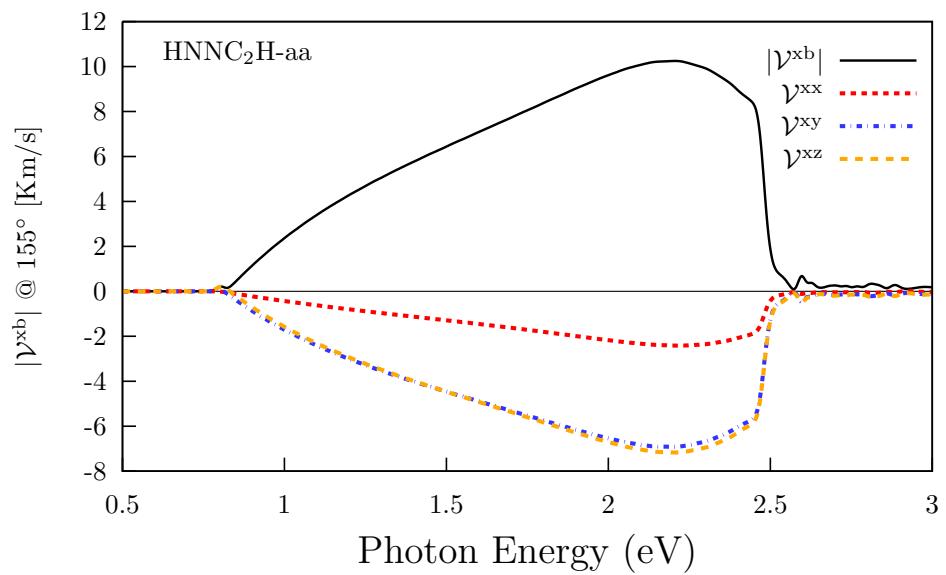


Figure 34: Three components of  $\mathcal{V}^{xb}$  @ 155°.

`fig:aa-vxb1`

### 3.2 $\mathcal{V}^{yb}$

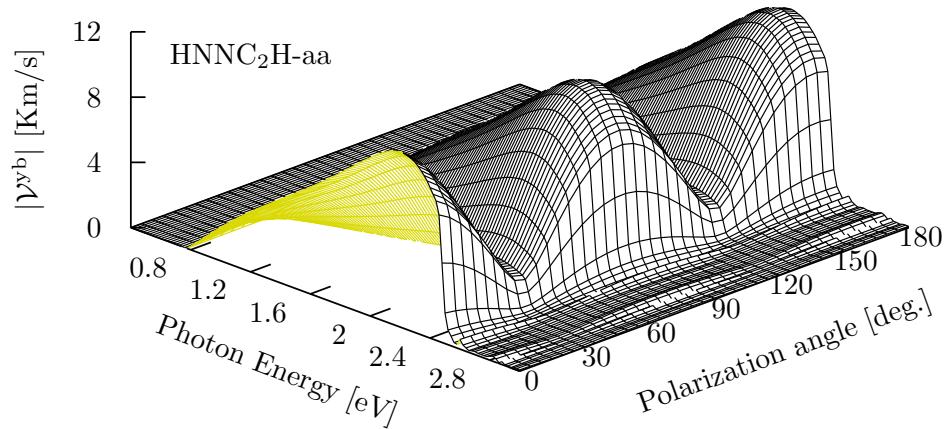


Figure 35: The most intense response for  $\mathcal{V}^{yb}$  is for  $155^\circ$ .

`fig:aa-magvybincang`

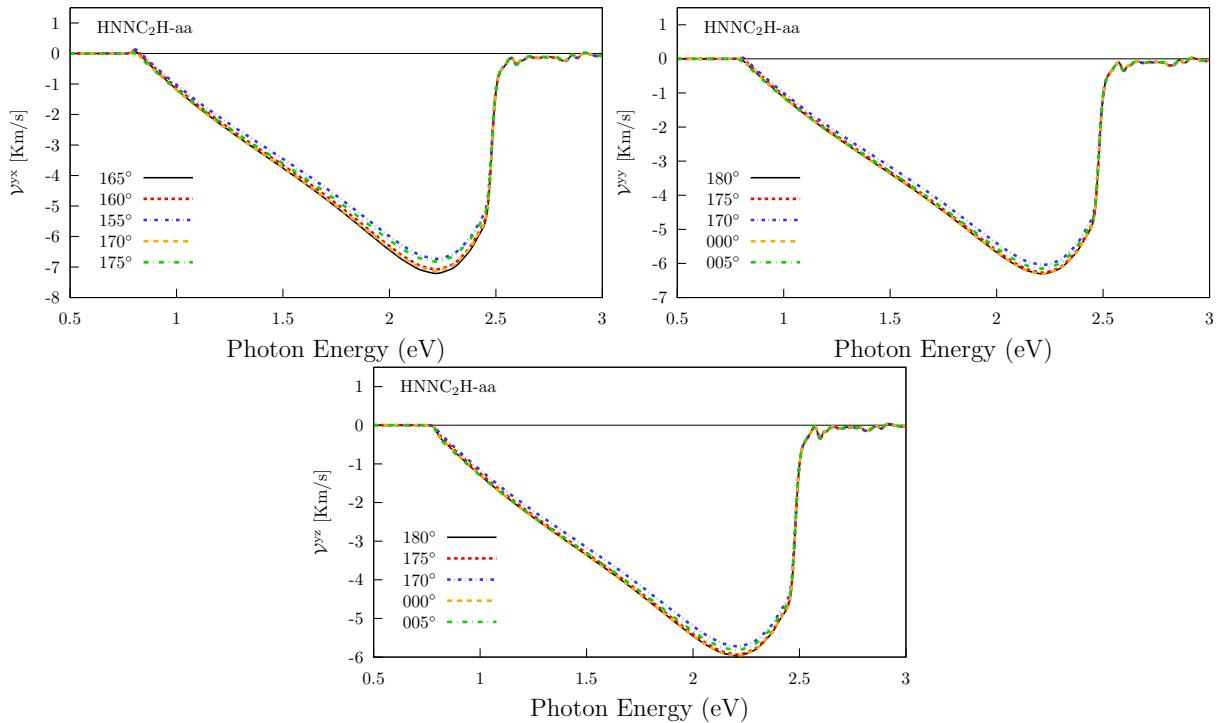


Figure 36: Cheking angle of incidence for  $y^b$  components. There is a different angle for each component to have the most intense response.

`fig:aa-ybangcomp`

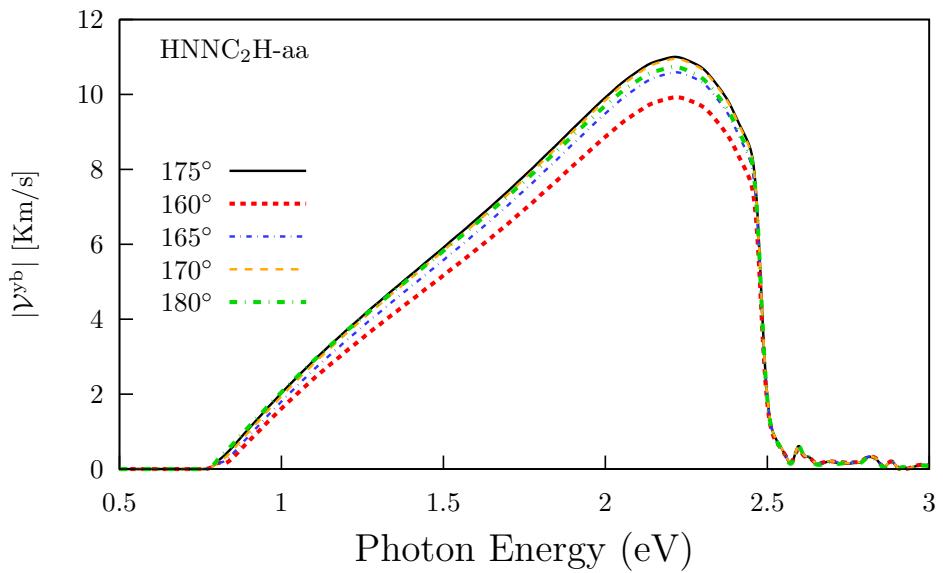


Figure 37: Comparisson of  $|V^{yb}|$  for different polarization angles.

fig:aa-magvyb

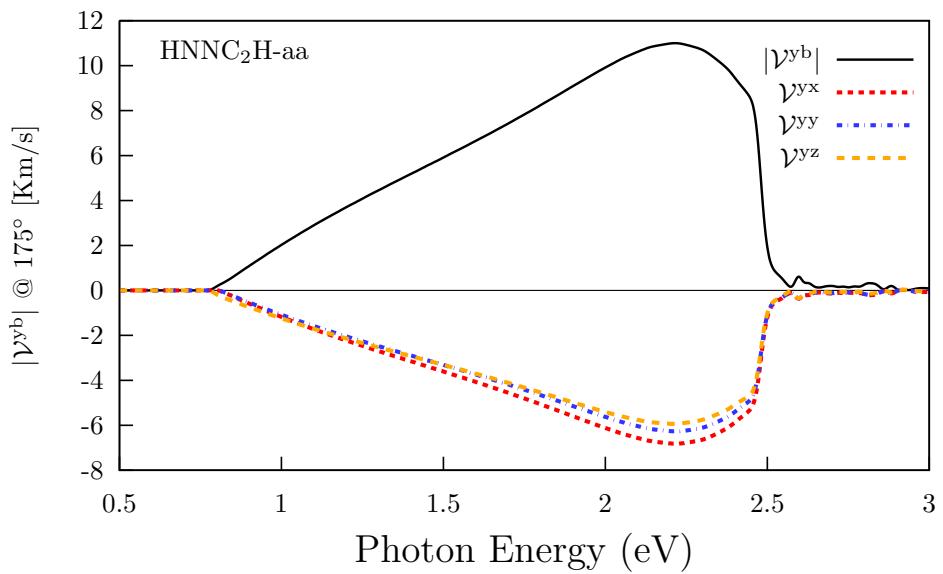


Figure 38: Three components of  $V^{yb}$  @ 175°.

fig:aa-vyb2

### 3.3 $|\mathcal{V}^{ab}|$ , angles $\theta$ and $\varphi$ , layers, and comparison with CdSe and GaAs.

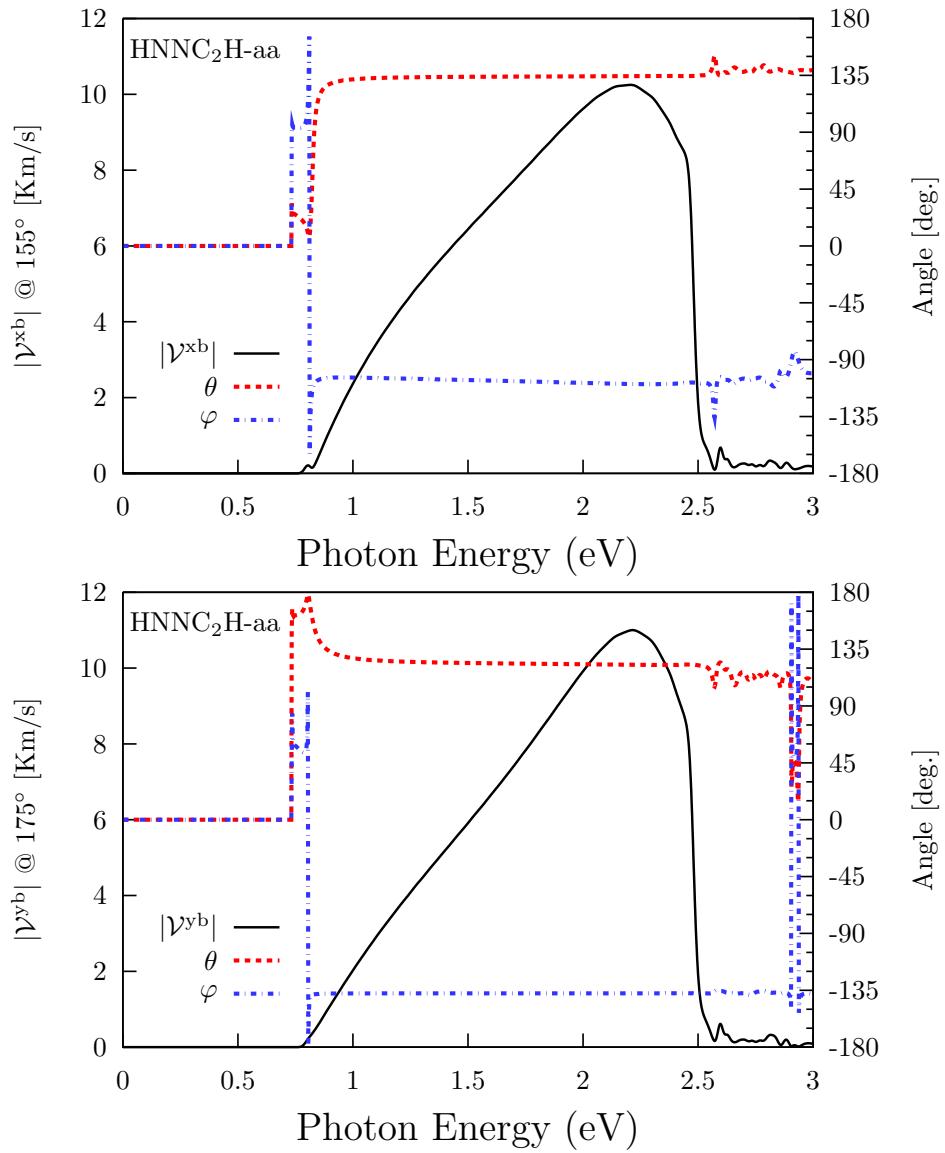


Figure 39:  $|\mathcal{V}^{ab}|$  (solid line, leftside scale) and the corresponding angles  $\theta$  and  $\varphi$  (dashed lines, rightside scale). Fig:aa\_rtp

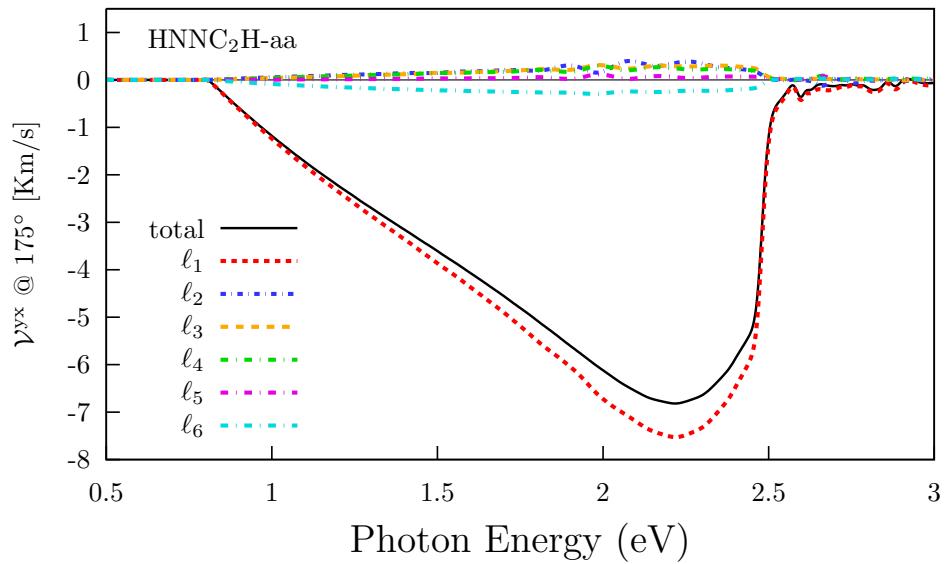


Figure 40: Layer decomposition for the most intense response:  $\mathcal{V}^{yz}$ .

[fig:aa-lay](#)

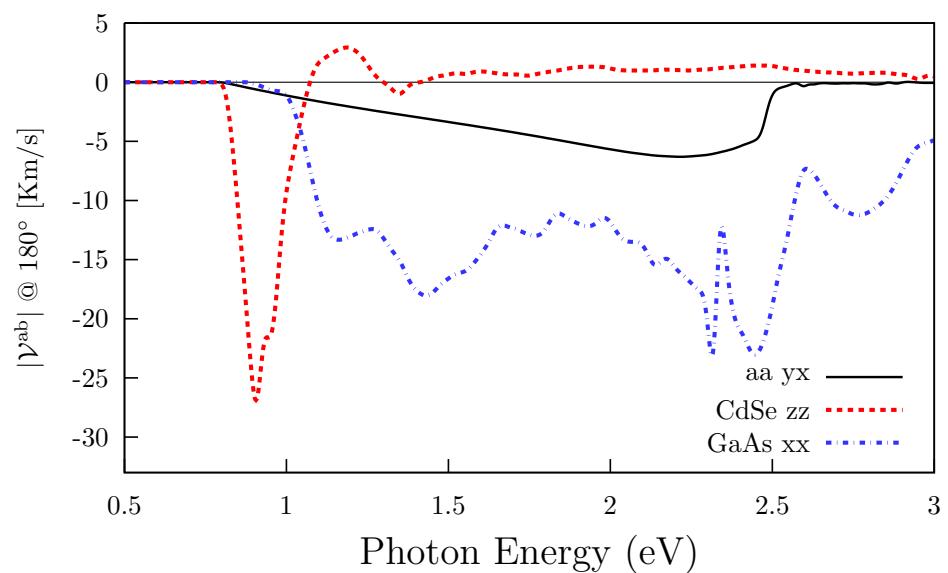


Figure 41: Comparison of the most intense response vs the most intense responses of CdSe and GaAs.

[fig:aa-comp](#)

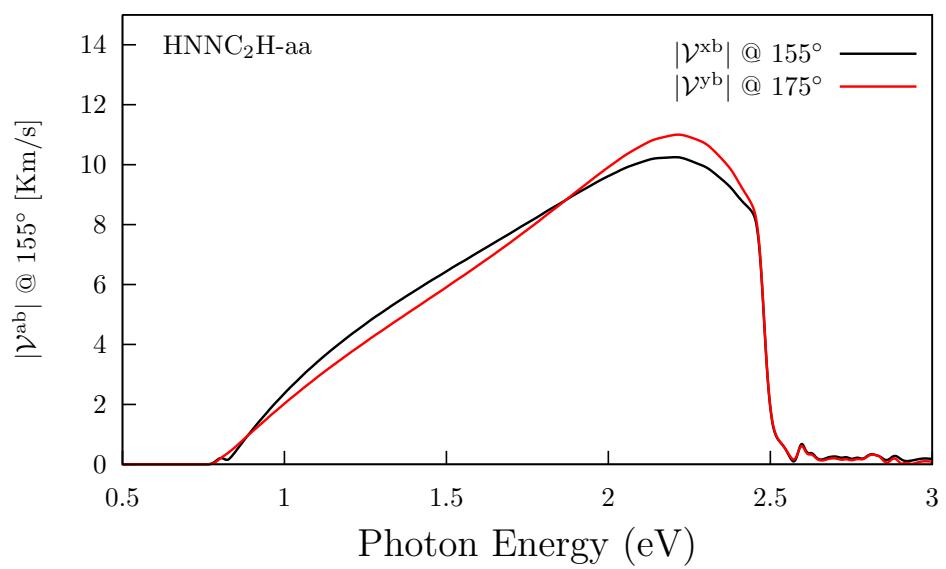


Figure 42: Comparisson of  $|\mathcal{V}^{xb}|$  and  $|\mathcal{V}^{yb}|$ .

`fig:aa-xbybcomp`

## 4 HN<sub>2</sub>C<sub>2</sub>H-ab

sec:ab

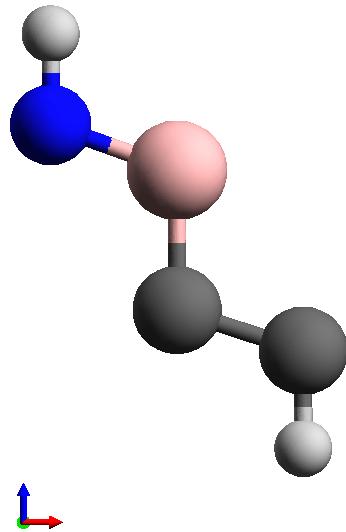


Figure 43: HN<sub>2</sub>C<sub>2</sub>H-ab structure

fig:abstruc

### 4.1 $\mathcal{V}^{\text{xb}}$

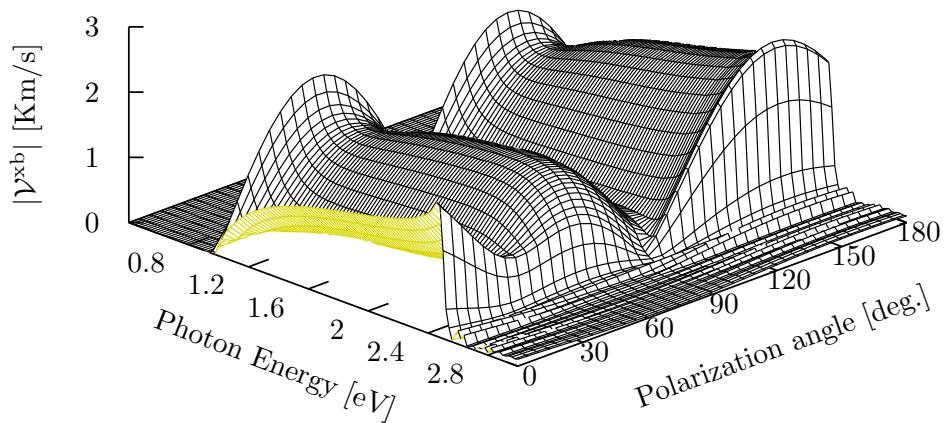


Figure 44: The most intense response for  $\mathcal{V}^{\text{xb}}$  is for  $155^\circ$ .

fig:ab-magvxbincang

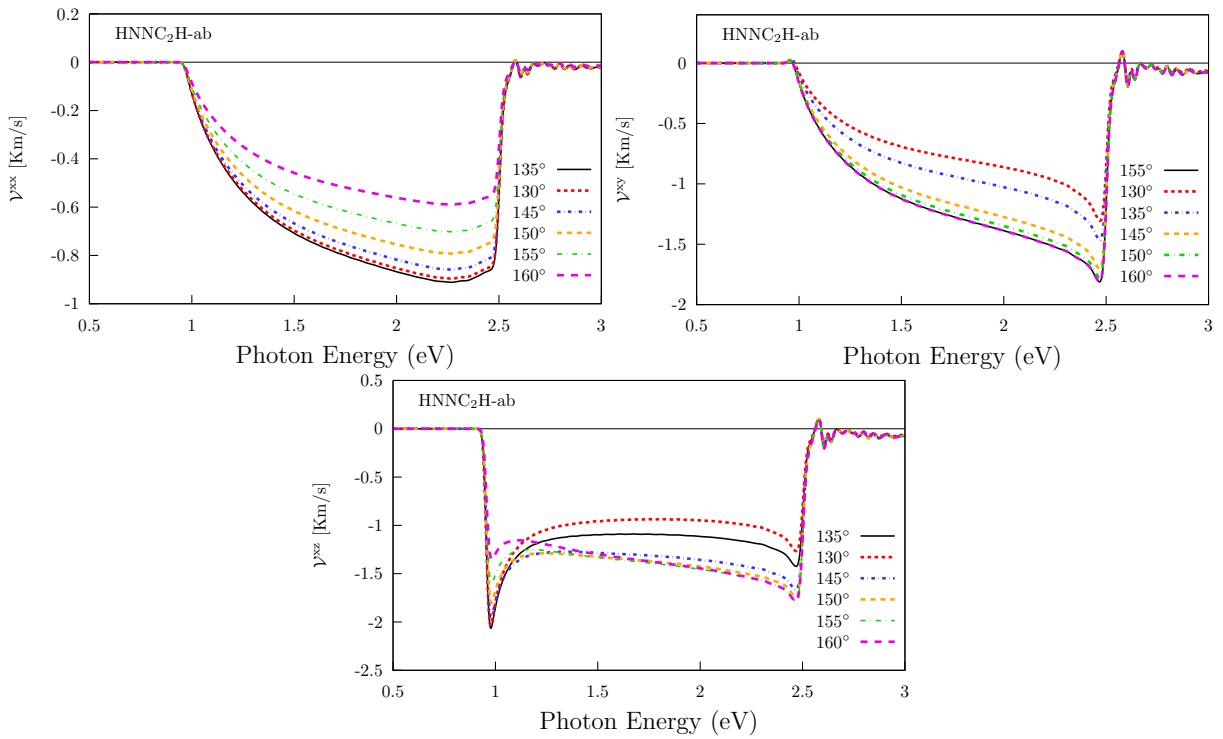


Figure 45: Cheking angle of incidence for  $xb$  components. There is a different angle for each component to have the most intense response.  
fig:ab-xbangcomp

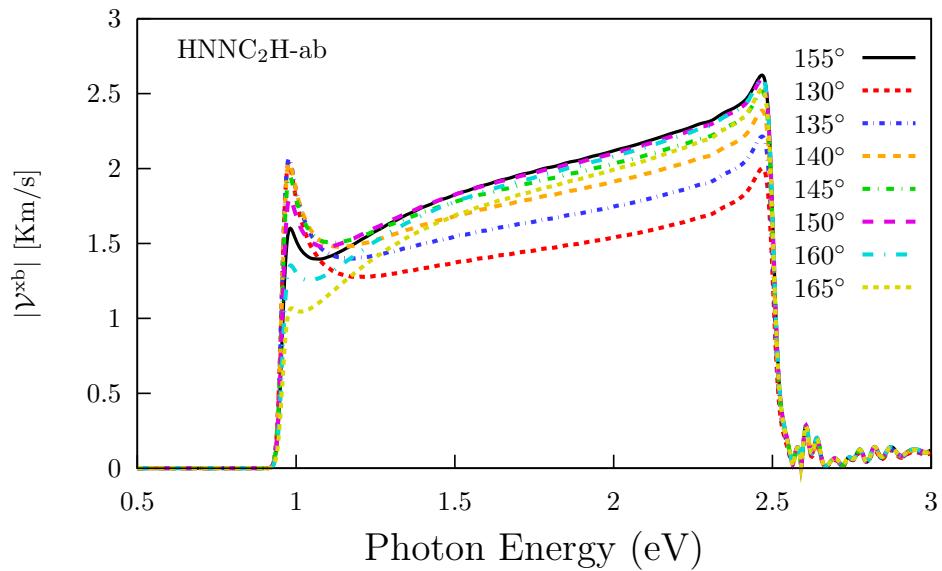


Figure 46: Comparissson of  $|V_{xb}|$  for different polarization angles.  
fig:ab-magvxb

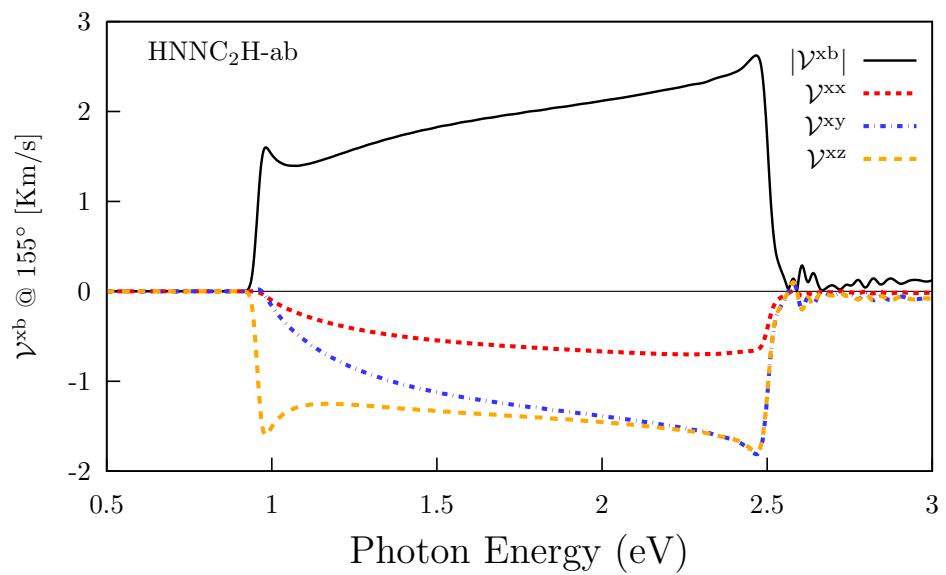


Figure 47: Three components of  $\mathcal{V}^{xb}$  @ 155°.

fig:ab-vxb

## 4.2 $\mathcal{V}^{yb}$

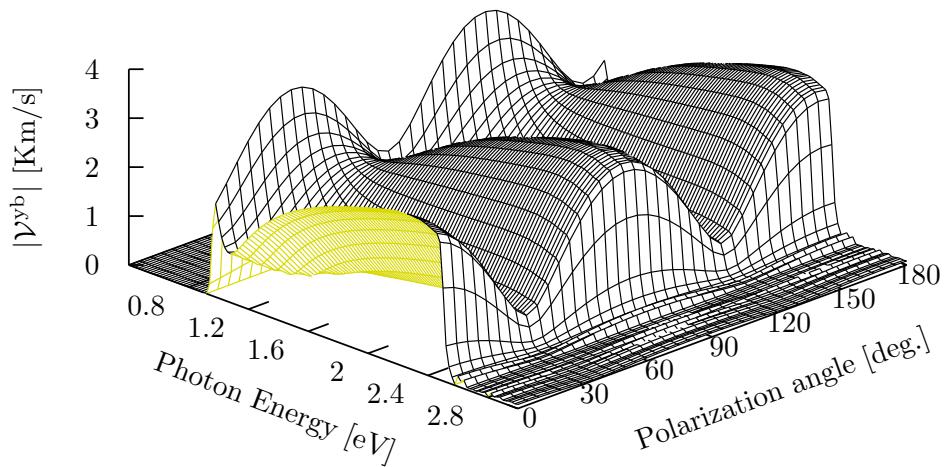


Figure 48: The most intense response for  $\mathcal{V}^{yb}$  is for  $155^\circ$ .

`fig:ab-magvybincang`

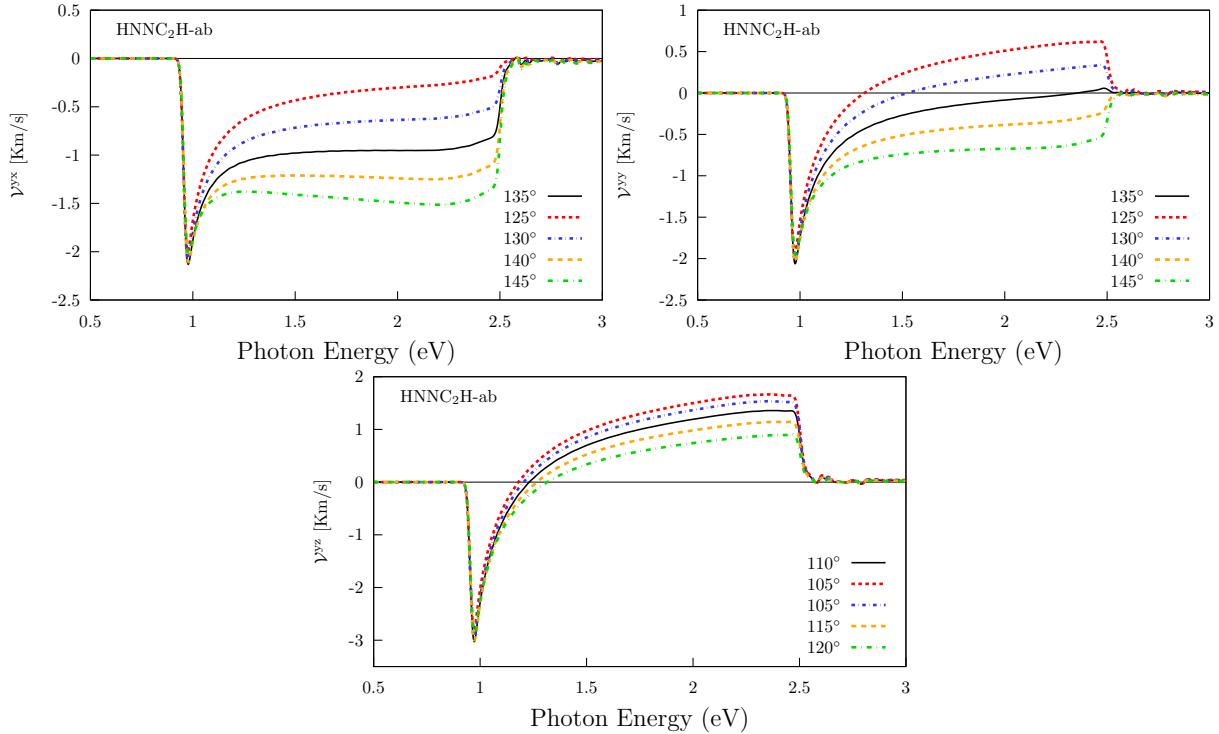


Figure 49: Cheking angle of incidence for  $yb$  components. There is a different angle for each component to have the most intense response.

`fig:ab-ybangcomp`

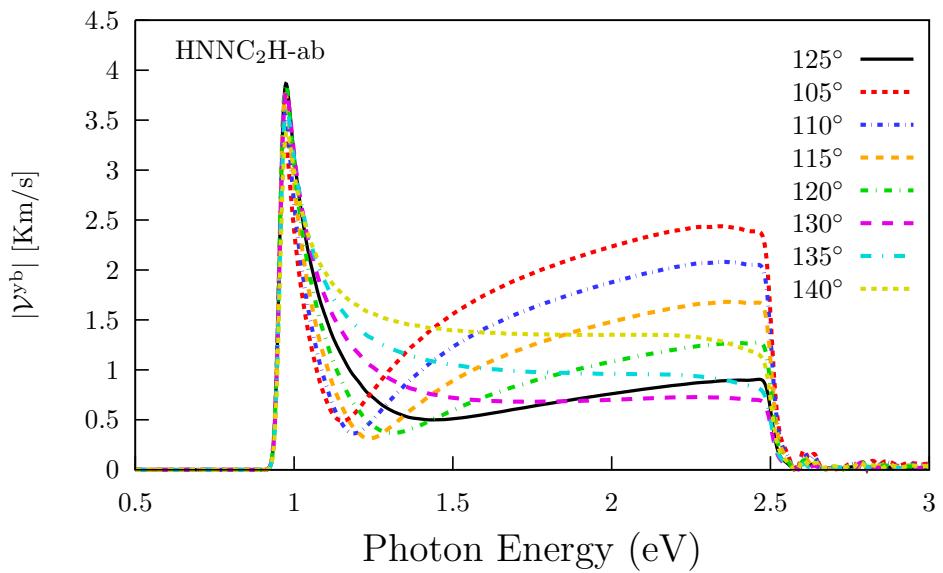


Figure 50: Comparisso[n of  $|V^{yb}|$  for different polarization angles.

`fig:ab-magvyb`

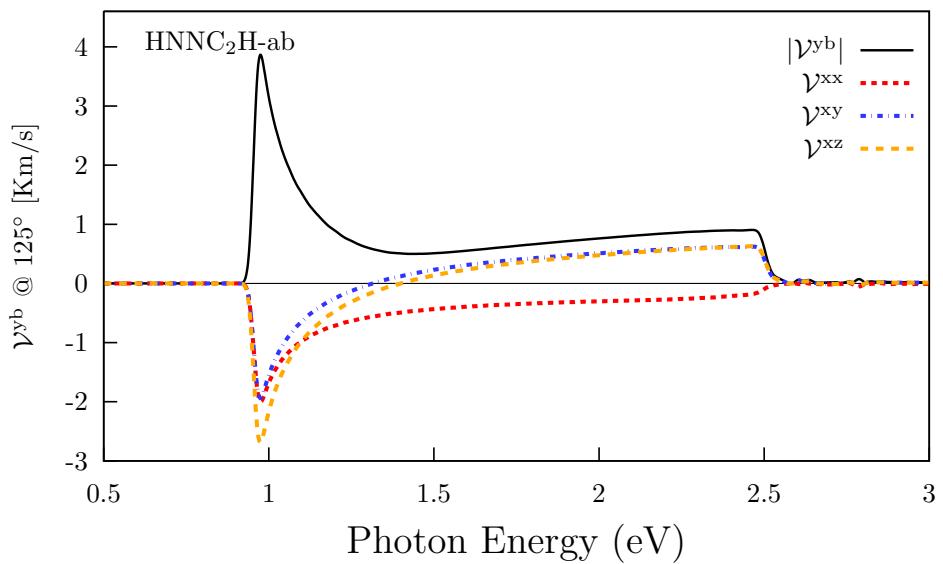


Figure 51: Three components of  $V^{yb}$  @  $125^\circ$ .

`fig:ab-vyb`

### 4.3 $|\mathcal{V}^{ab}|$ , angles $\theta$ and $\varphi$ , layers, and comparison with CdSe and GaAs.

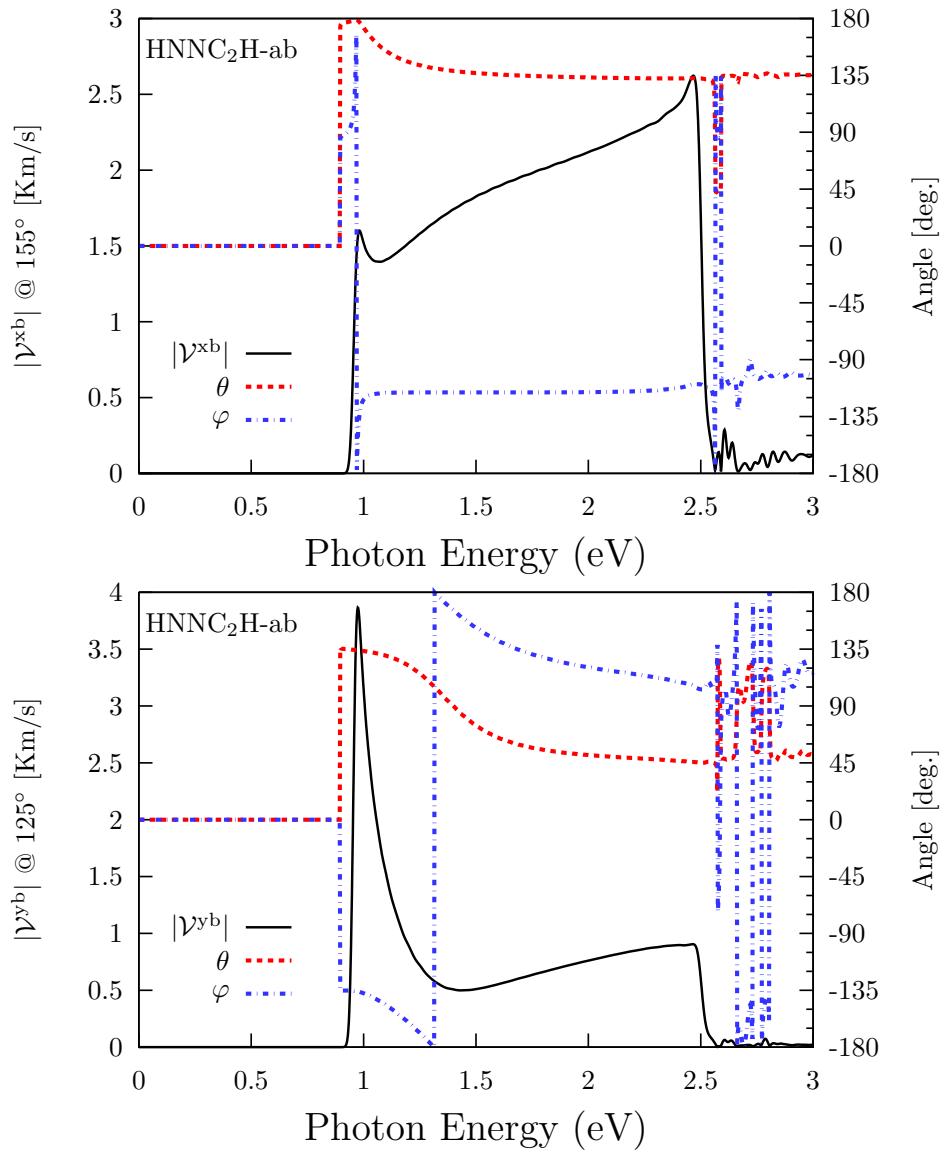


Figure 52:  $|\mathcal{V}^{ab}|$  (solid line, leftside scale) and the corresponding angles  $\theta$  and  $\varphi$  (dashed lines, rightside scale). Fig: ab\_rtp

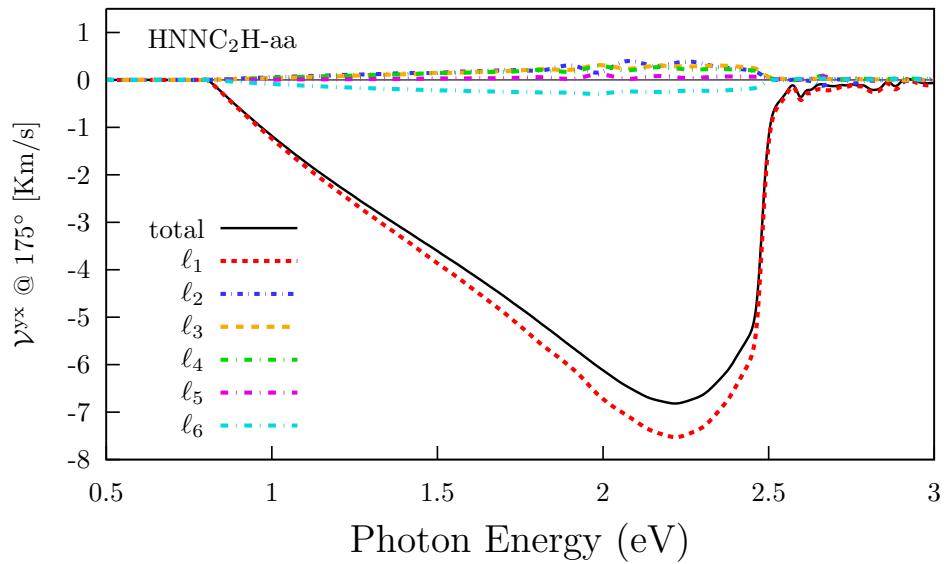


Figure 53: Layer decomposition for the most intense response:  $\mathcal{V}^{yz}$ .

[fig:aa-lay](#)

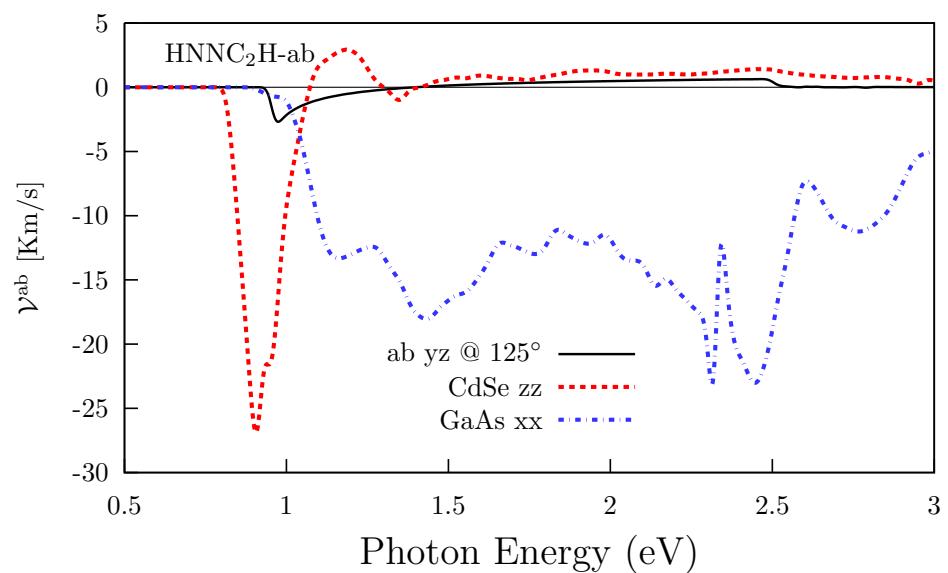


Figure 54: Comparissoin of the most intense response vs the most intense responses of CdSe and GaAs.

[fig:ab-comp](#)

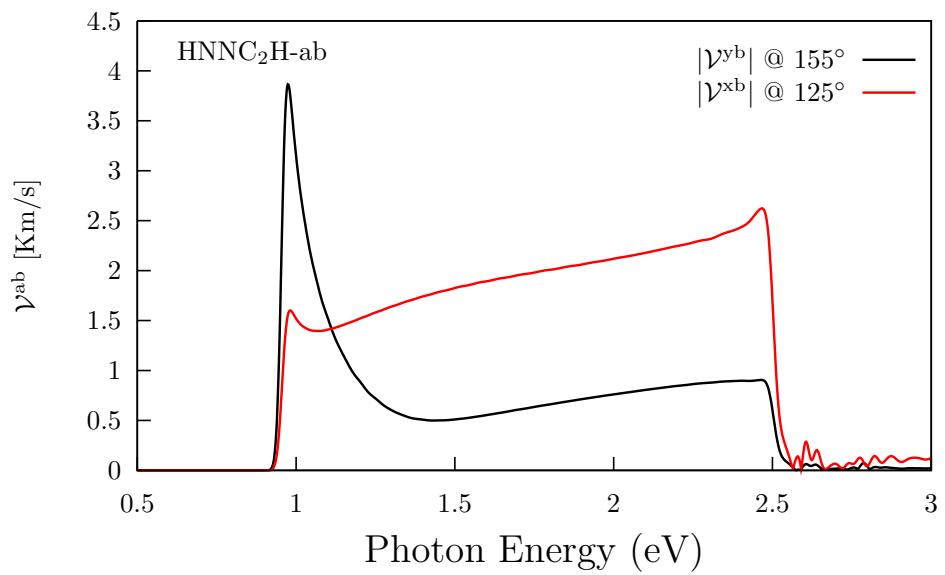


Figure 55: Comparisson of  $|\mathcal{V}^{xb}|$  and  $|\mathcal{V}^{yb}|$ .

`fig:ab-xbybcomp`