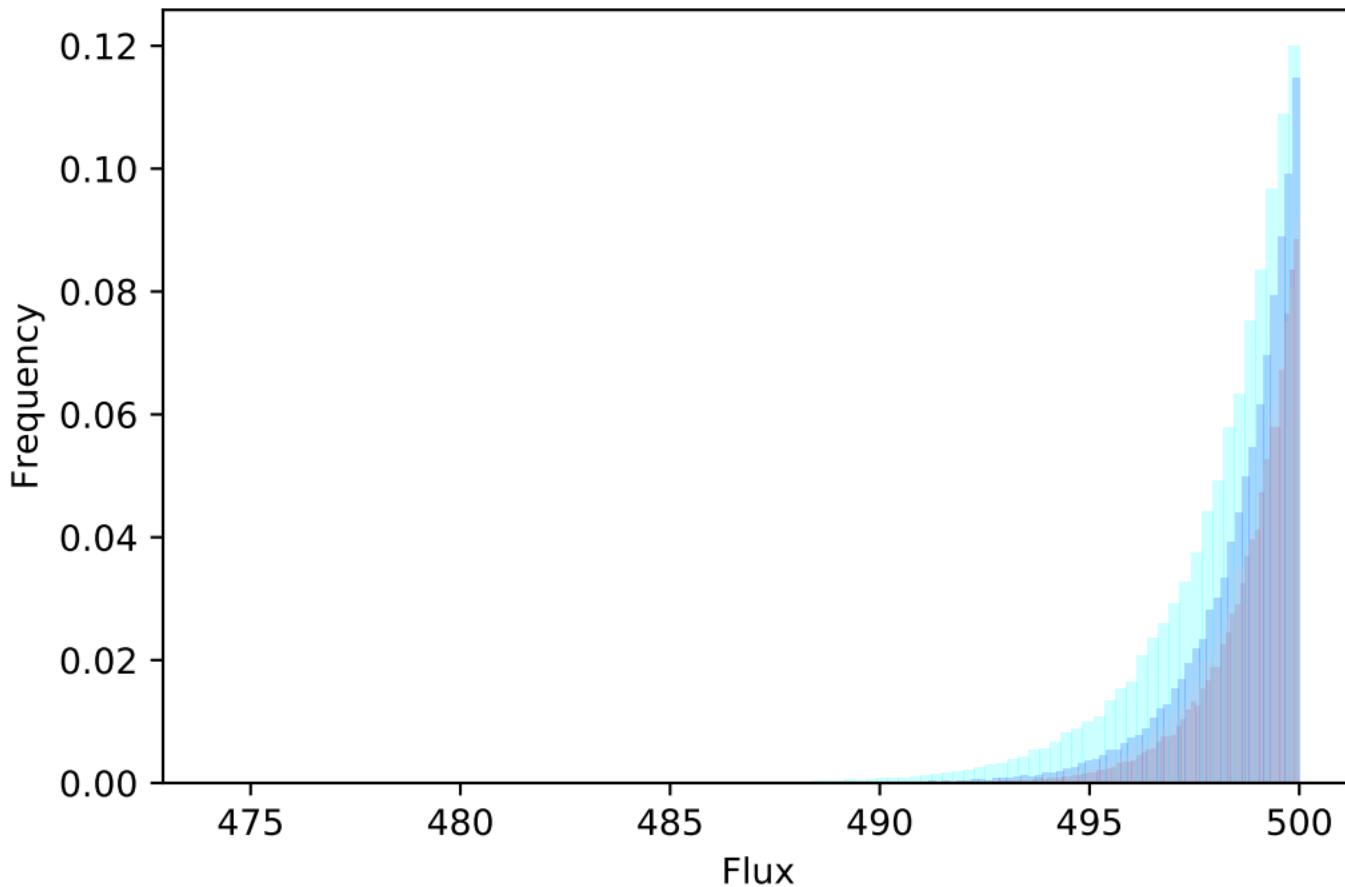
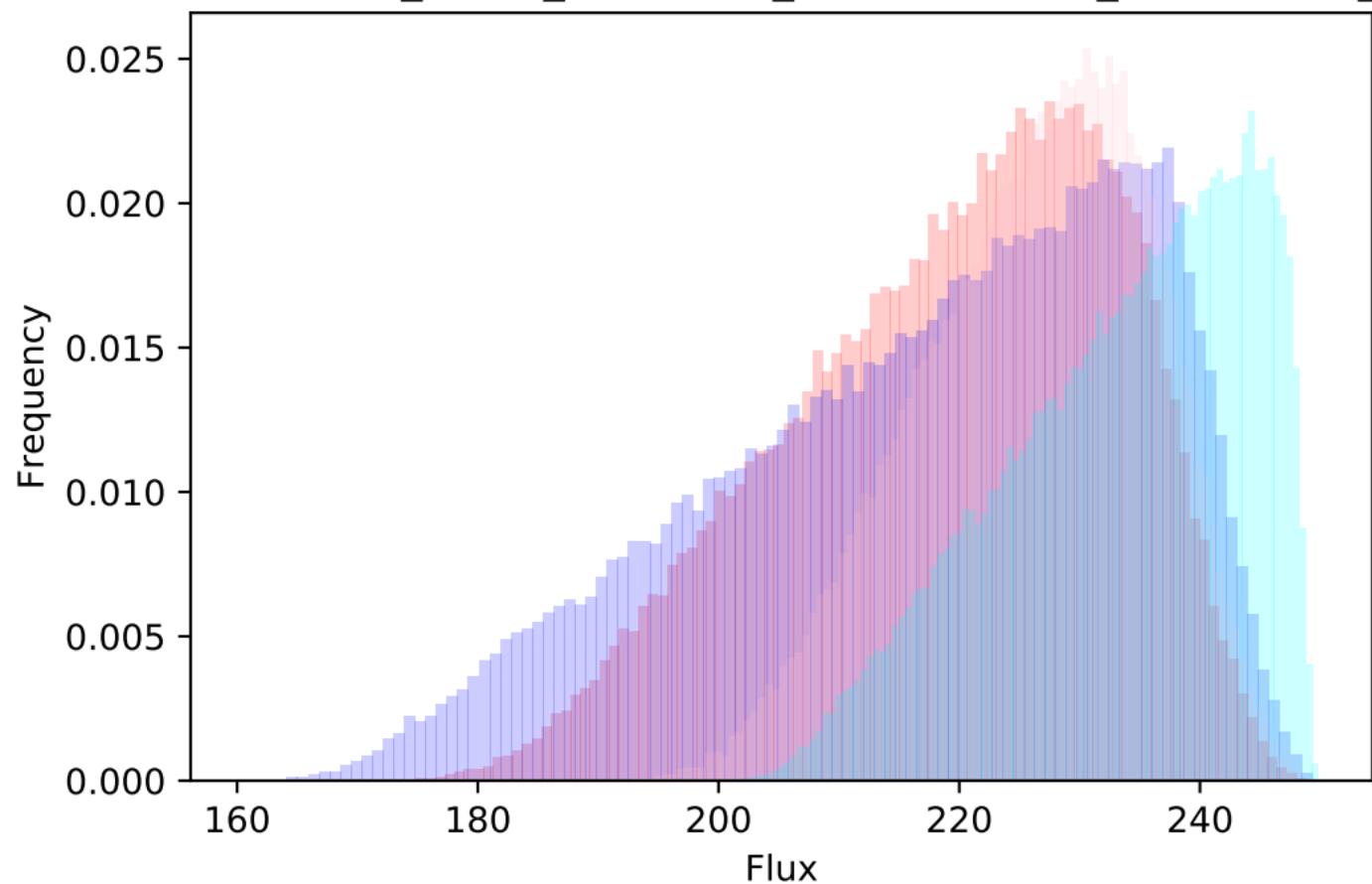
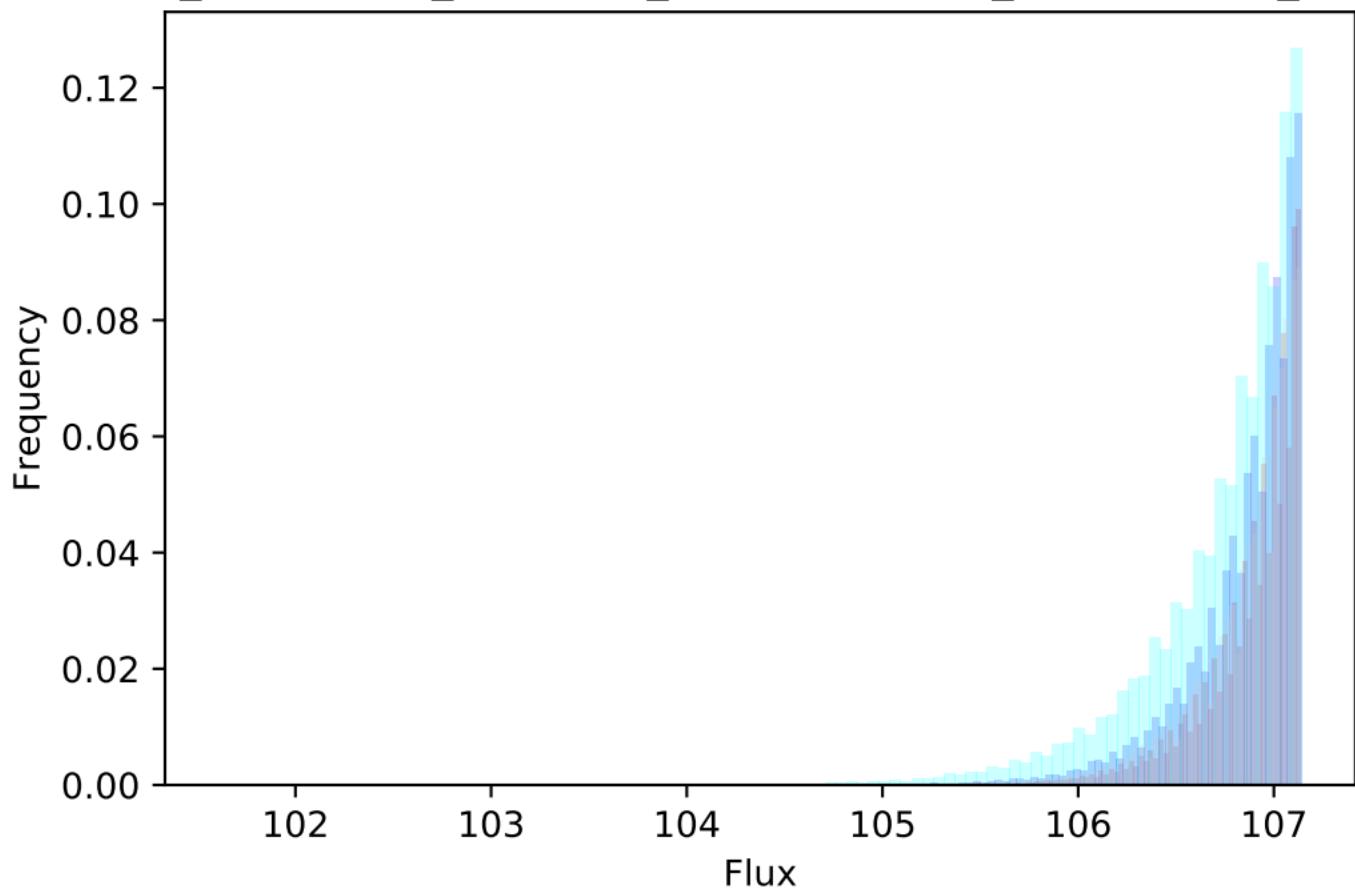
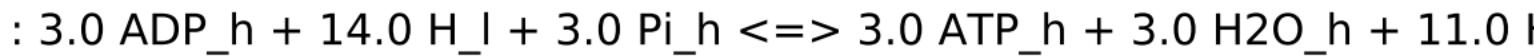
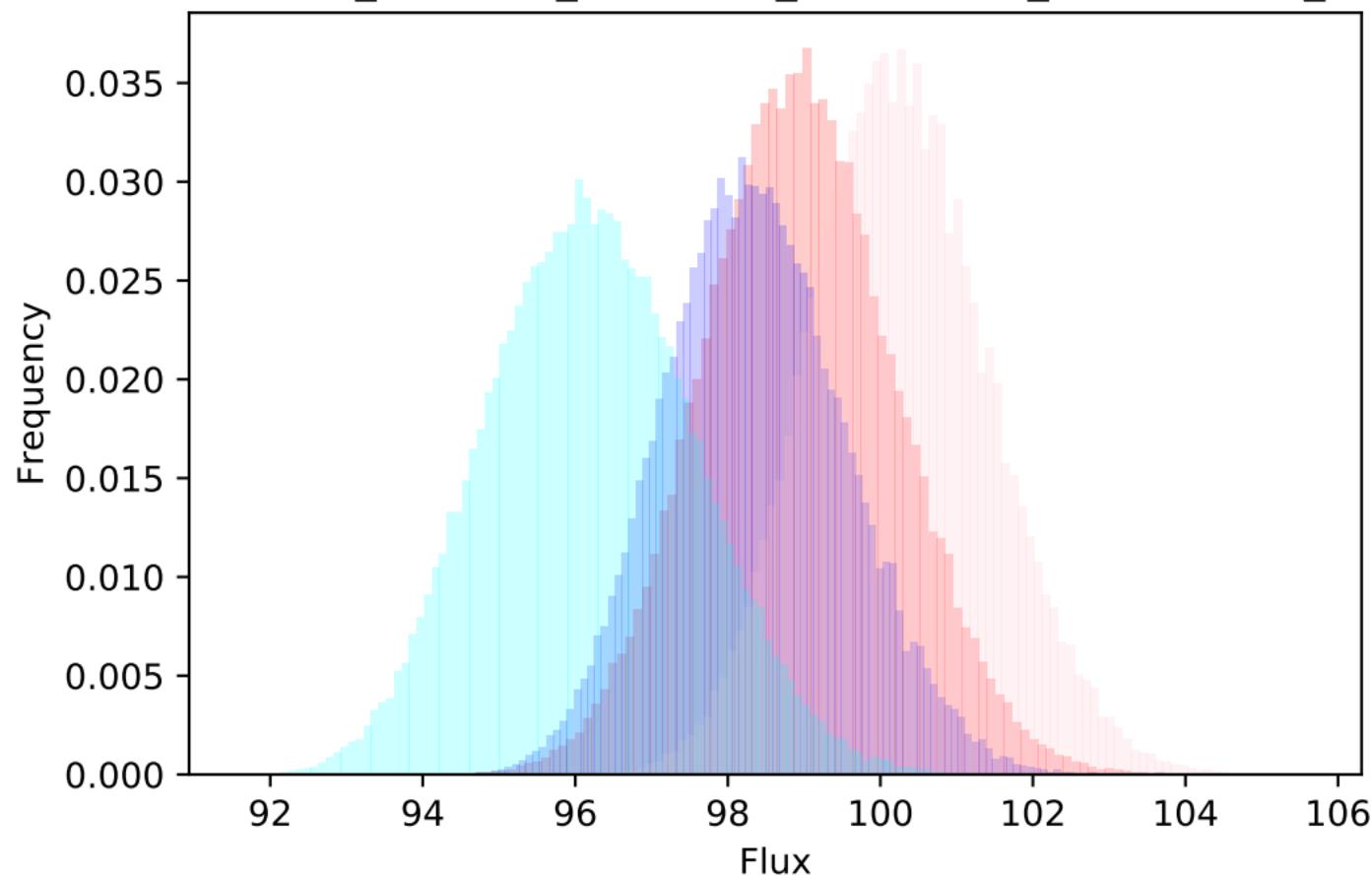


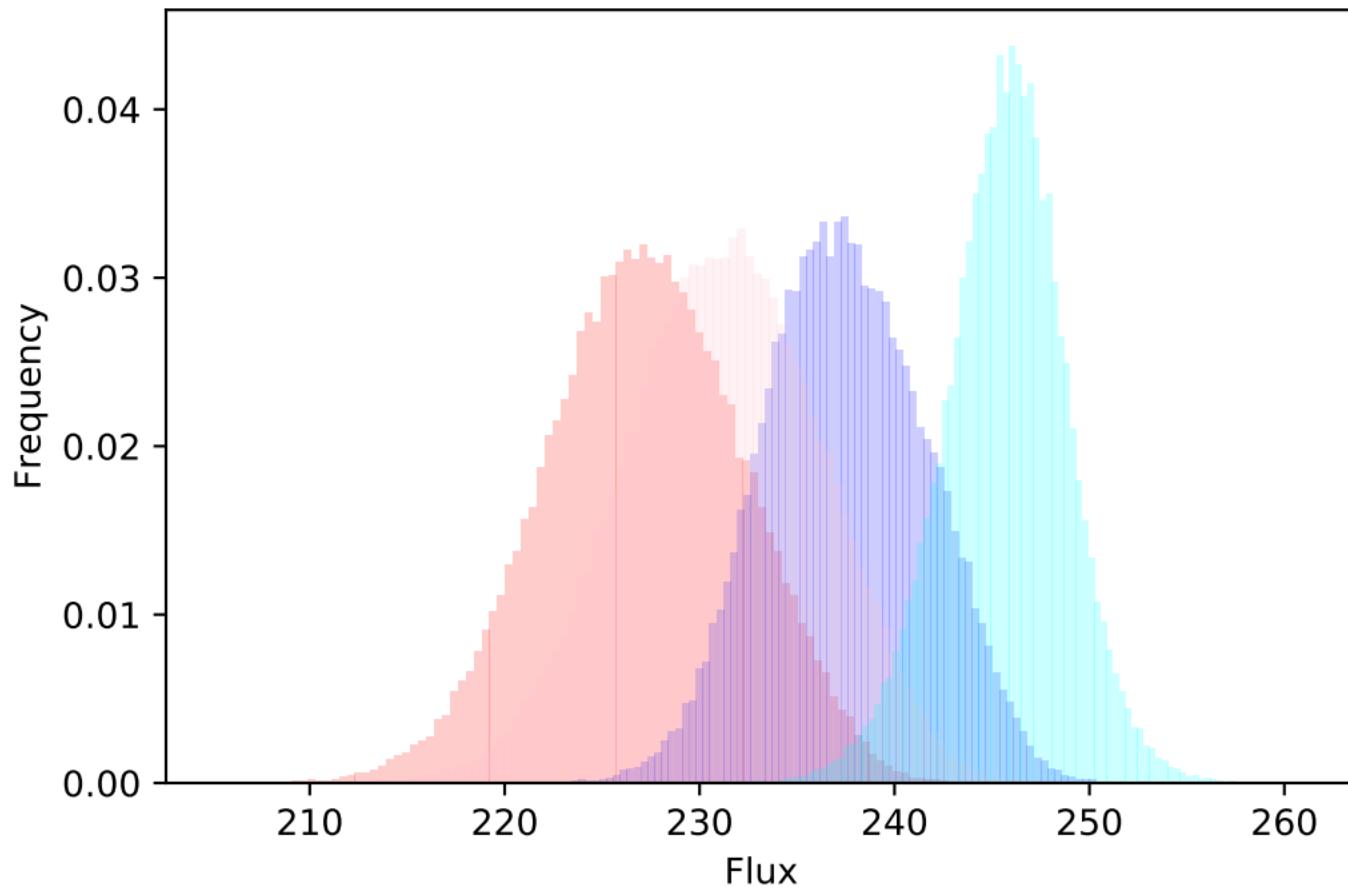
2 : Fdox\_h + PCrd\_h + hnu\_h --> Fdrd\_h + PCox\_h



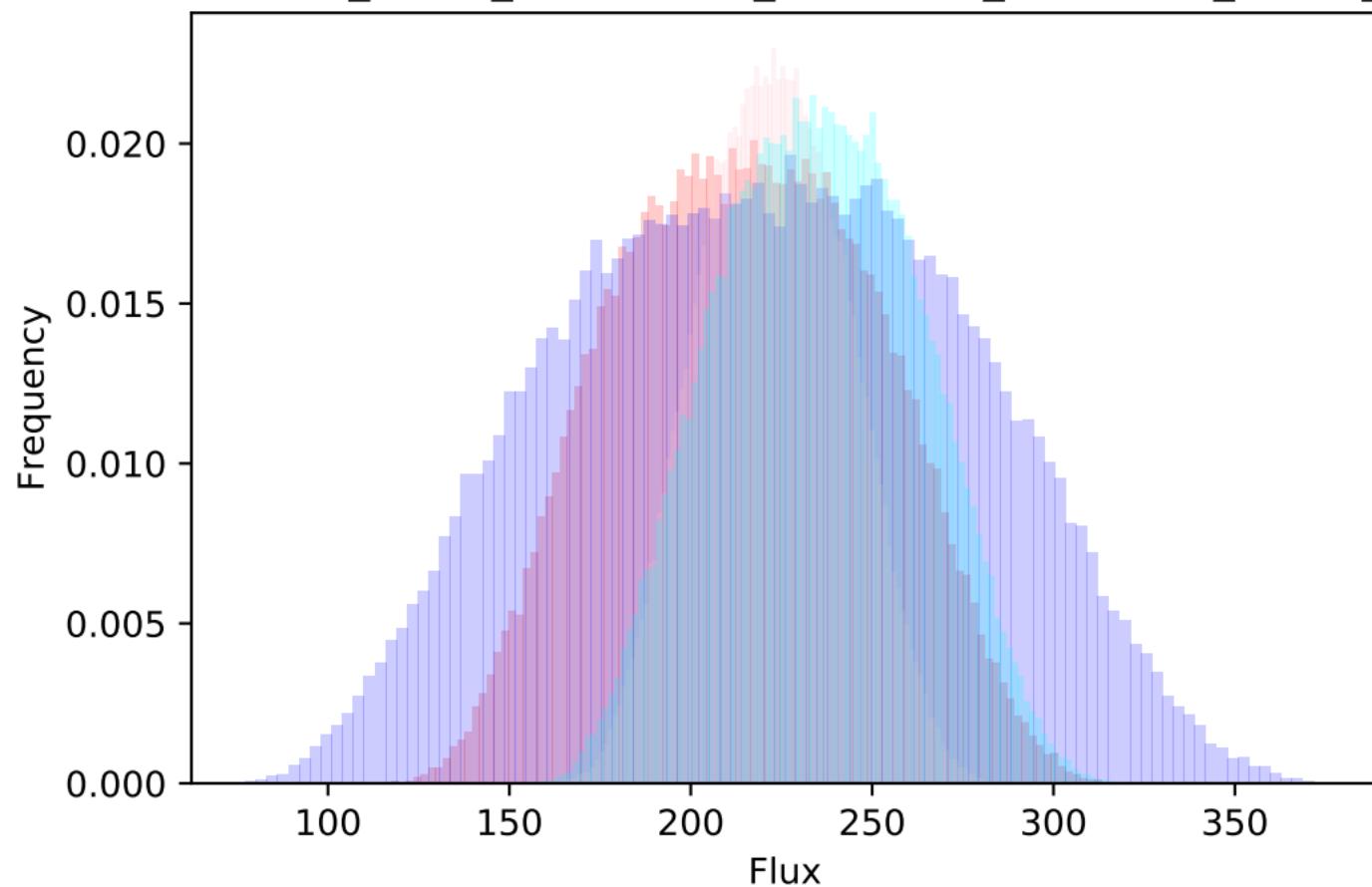




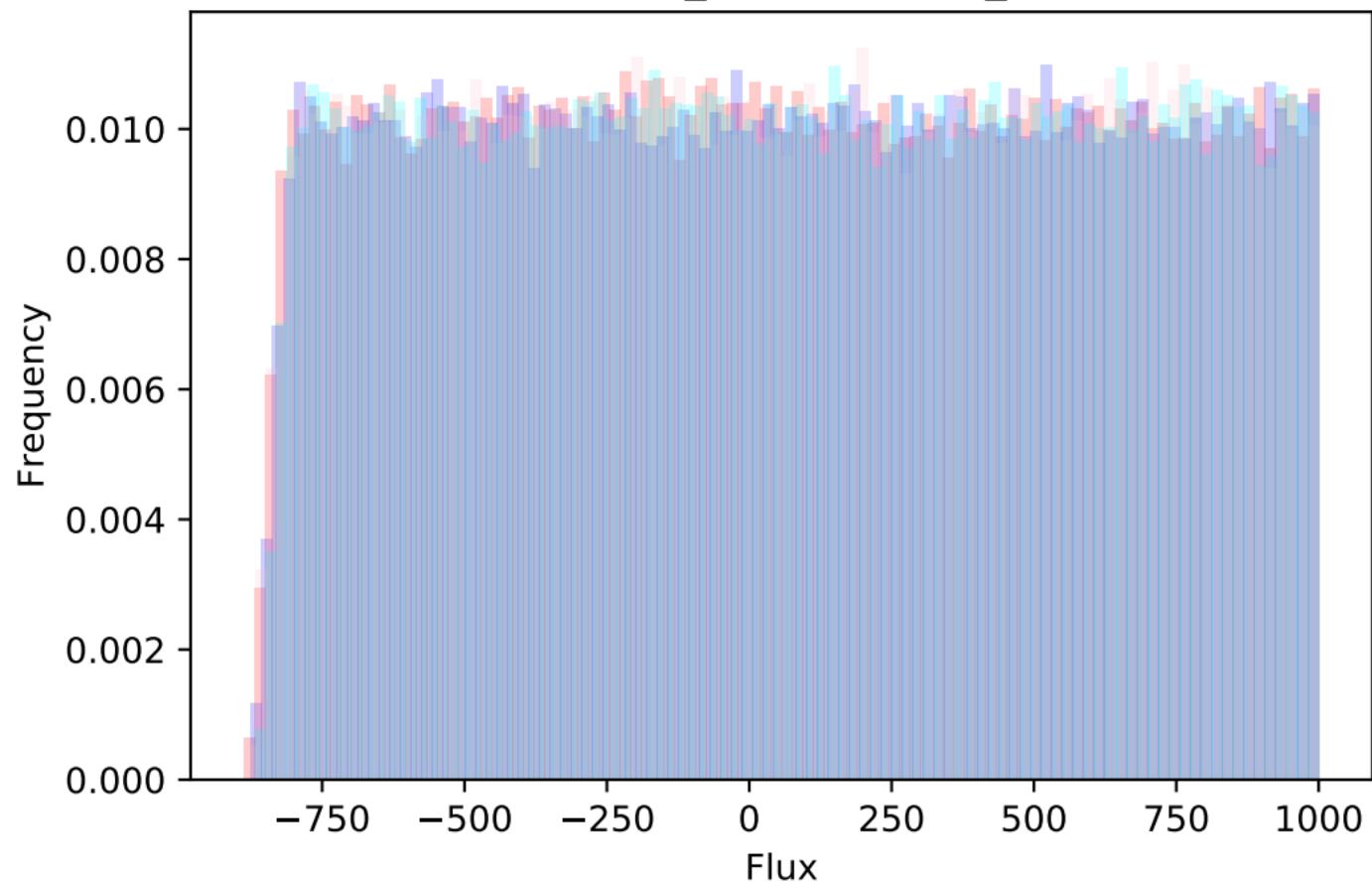




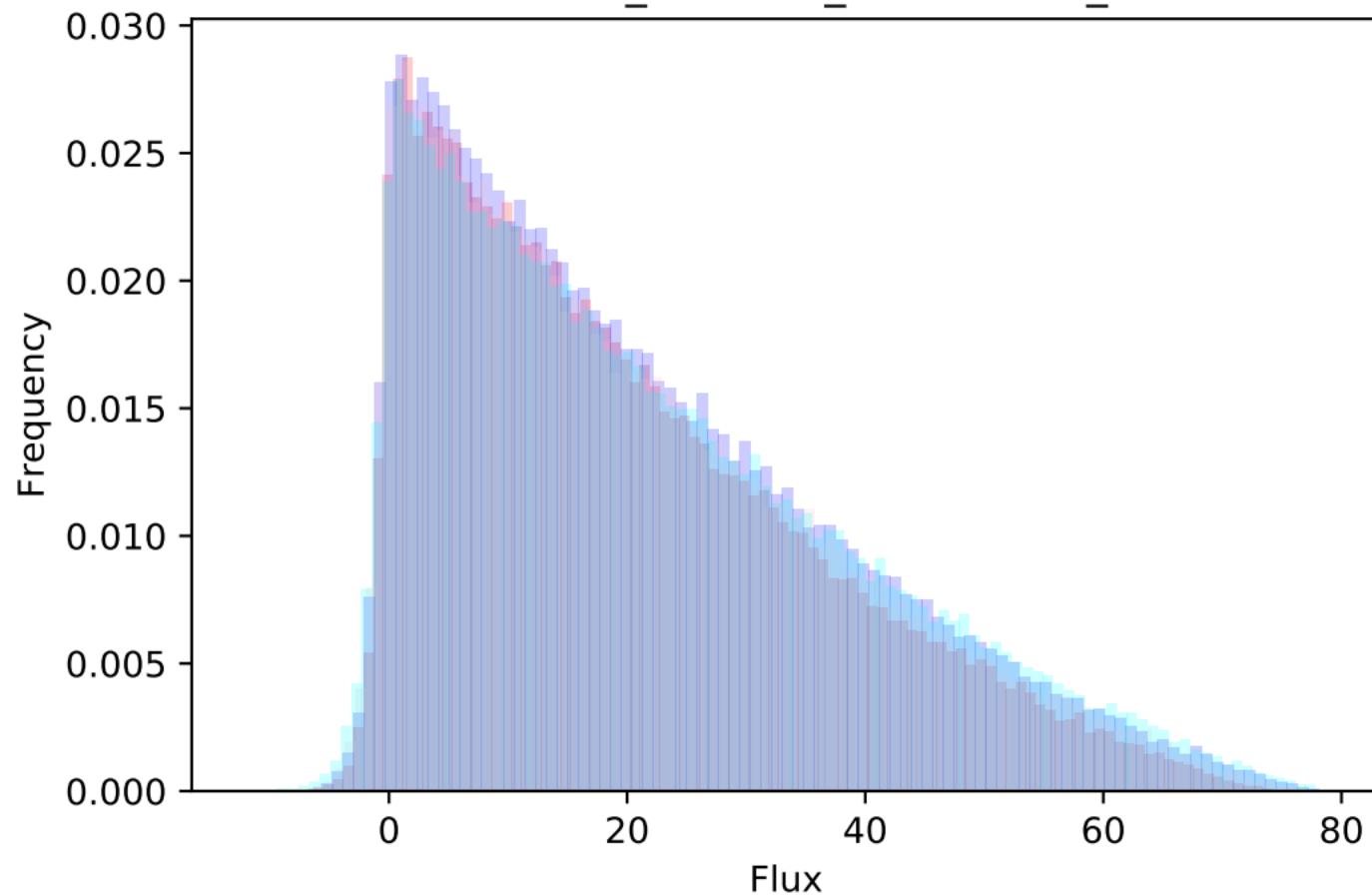
7 : DPGA\_h + H\_h + NADPH\_h --> GAP\_h + NADP\_h + Pi\_h

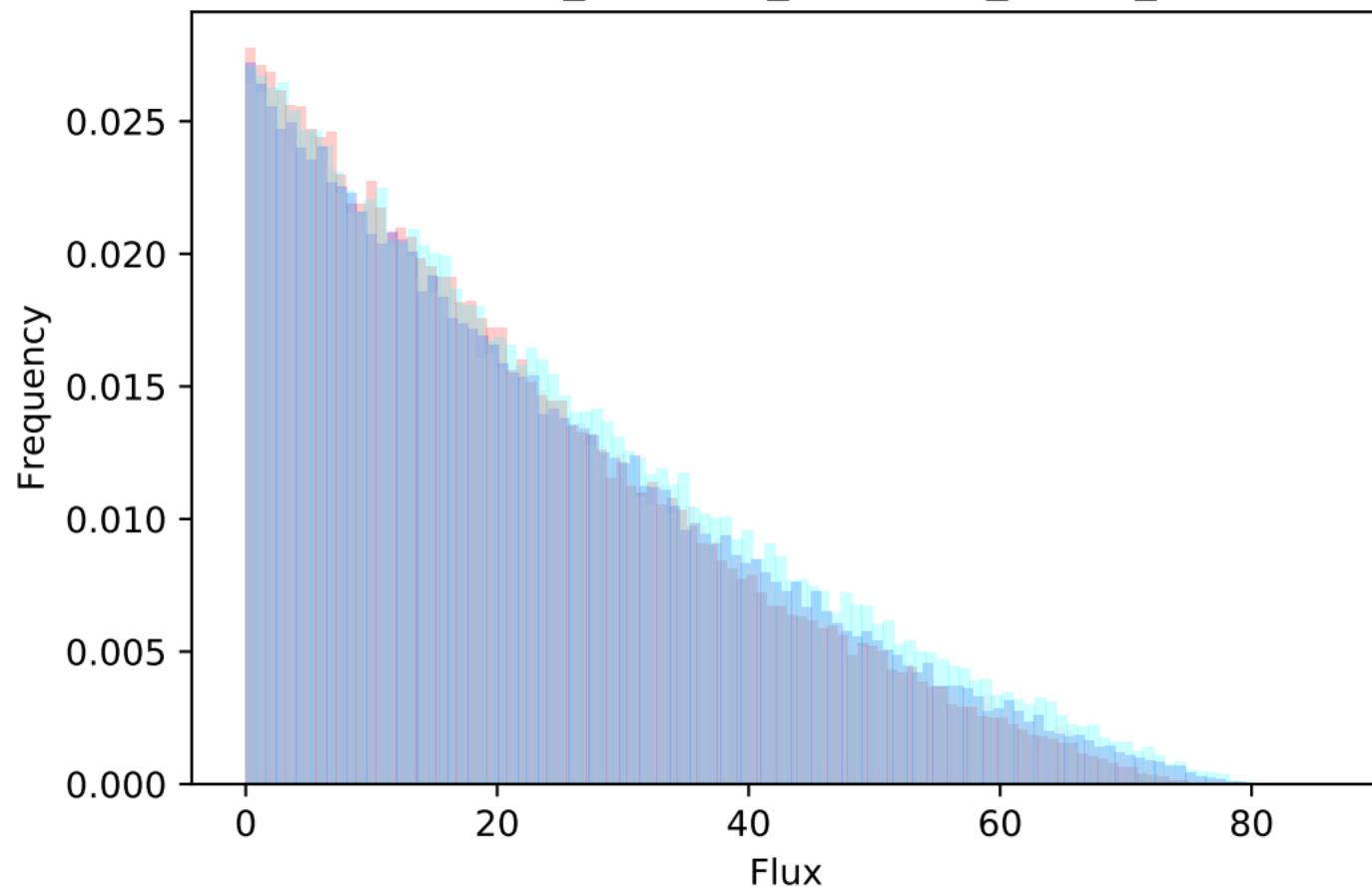
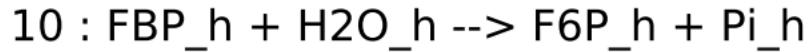


8 : GAP\_h <=> DHAP\_h

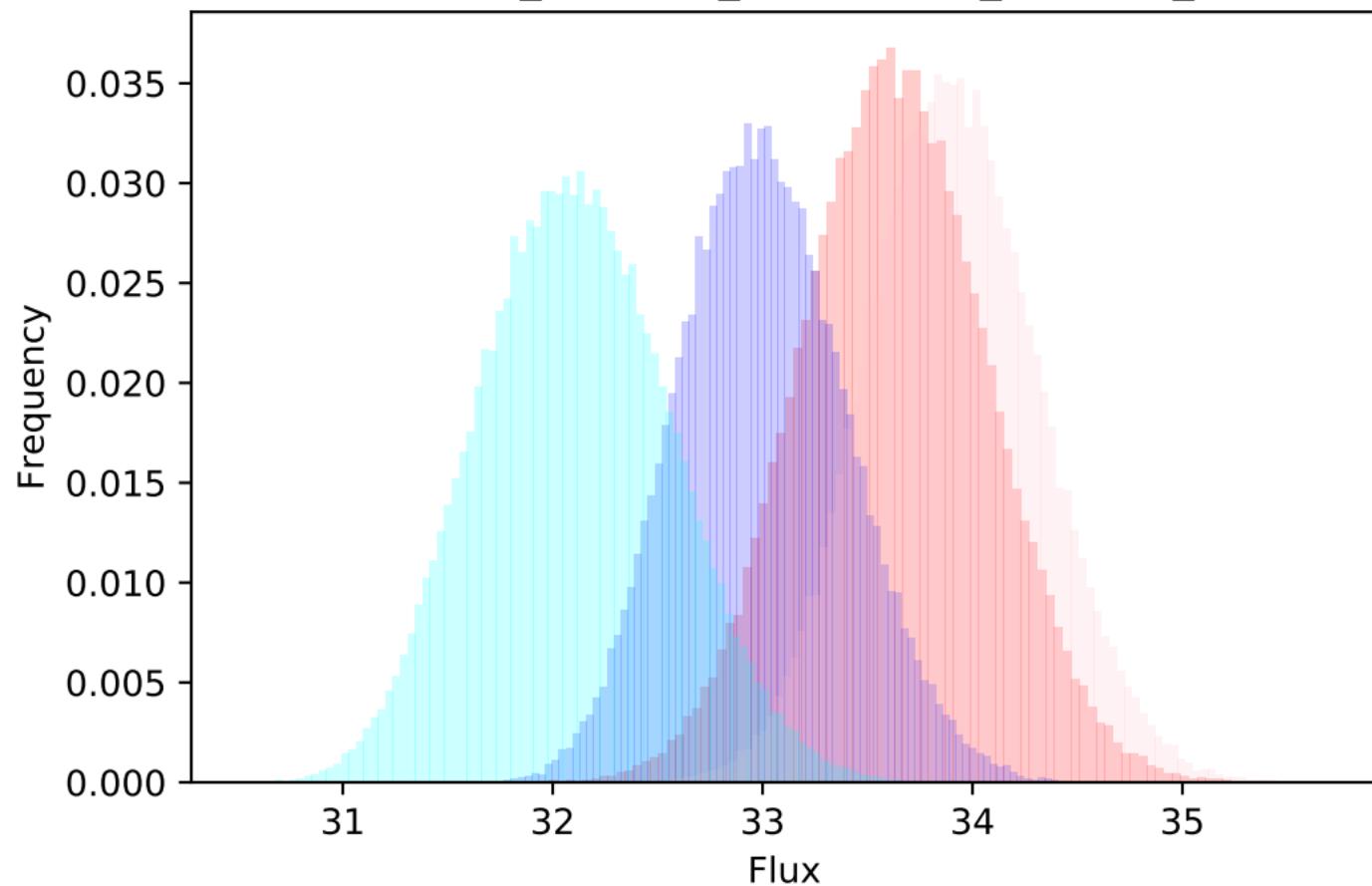


9 : DHAP\_h + GAP\_h <=> FBP\_h

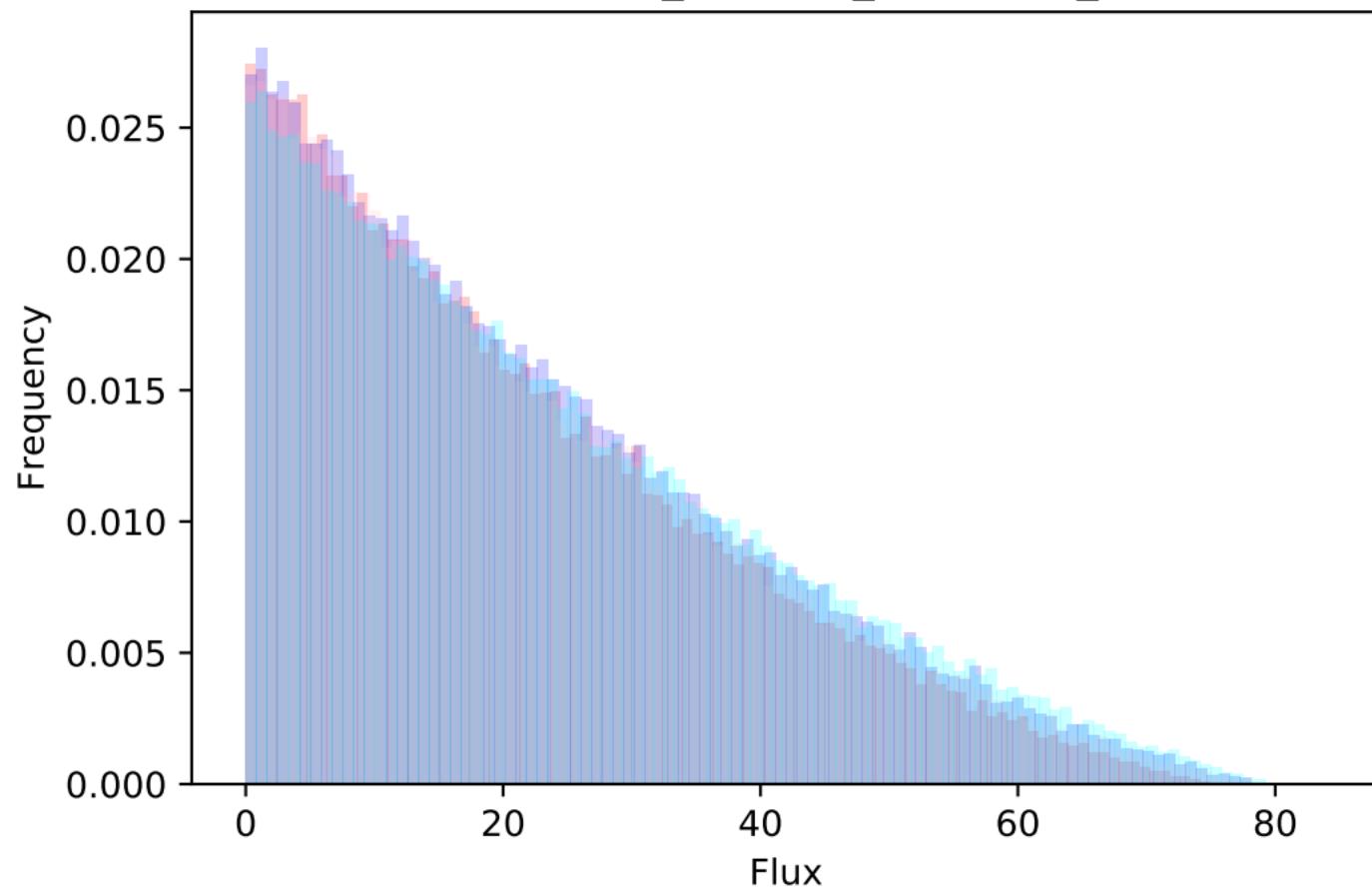


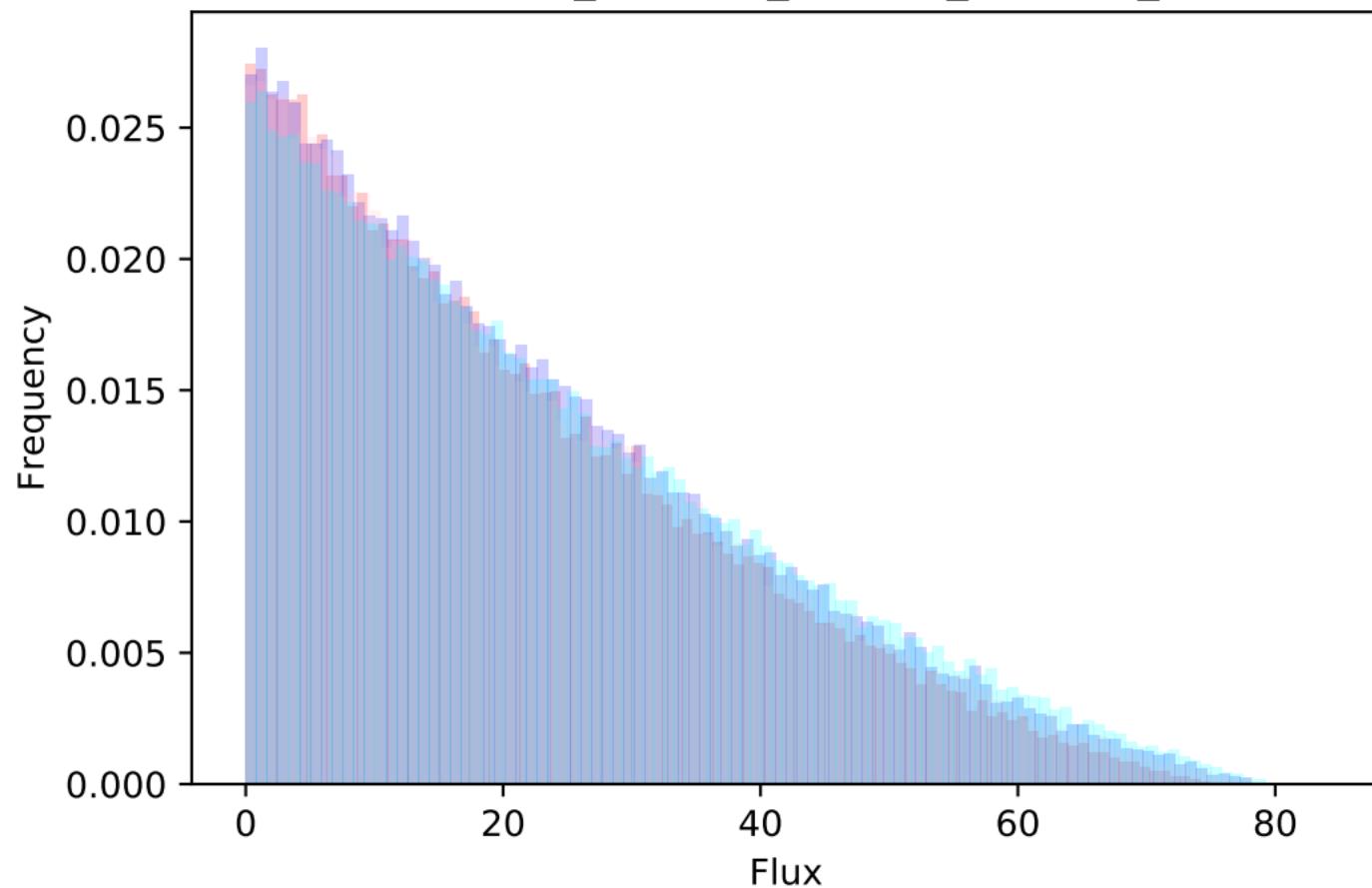
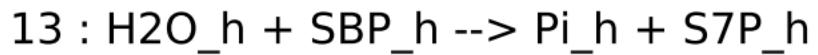


11 : F6P\_h + GAP\_h <=> E4P\_h + X5P\_h

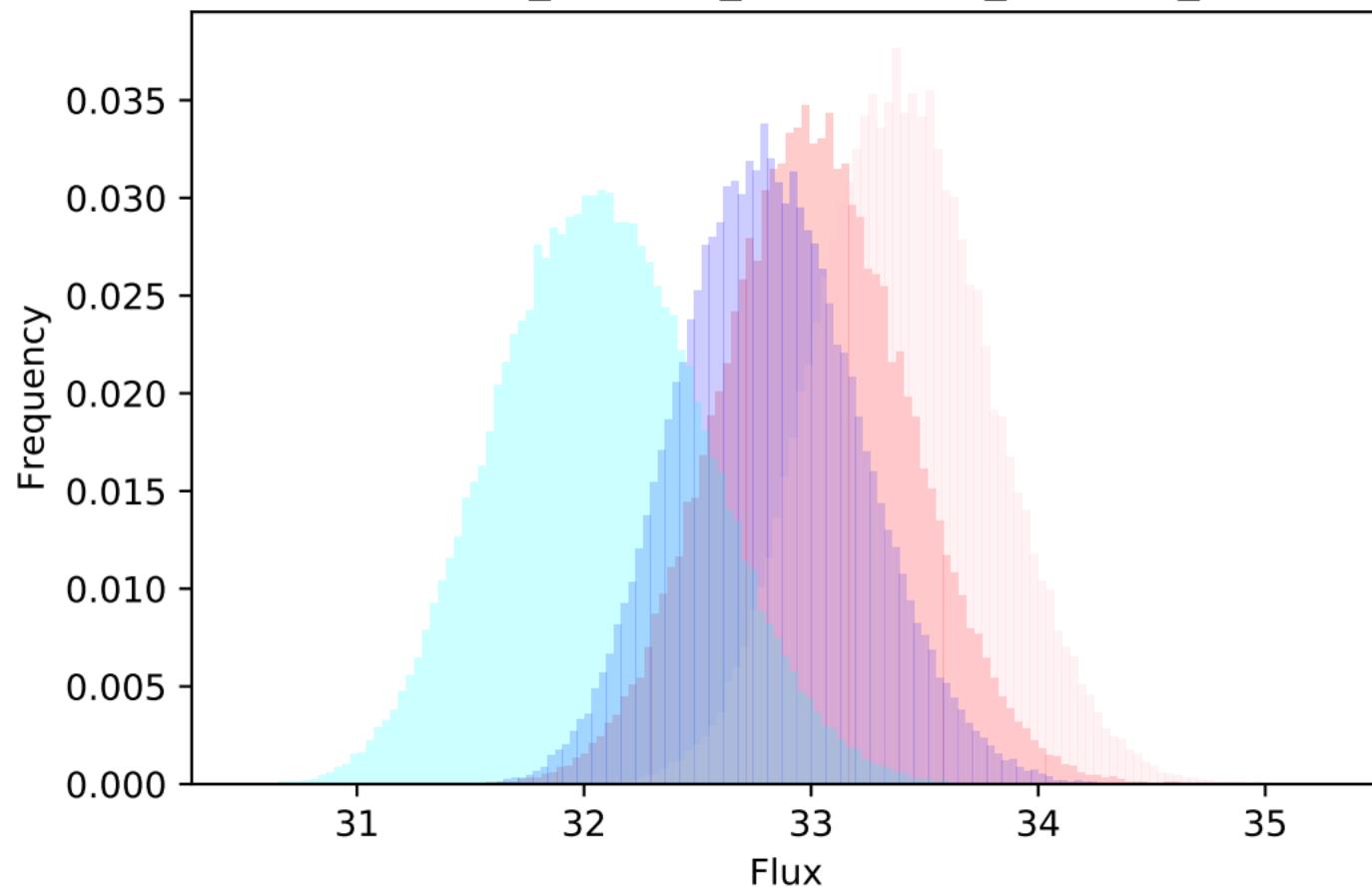


12 : DHAP\_h + E4P\_h --> SBP\_h

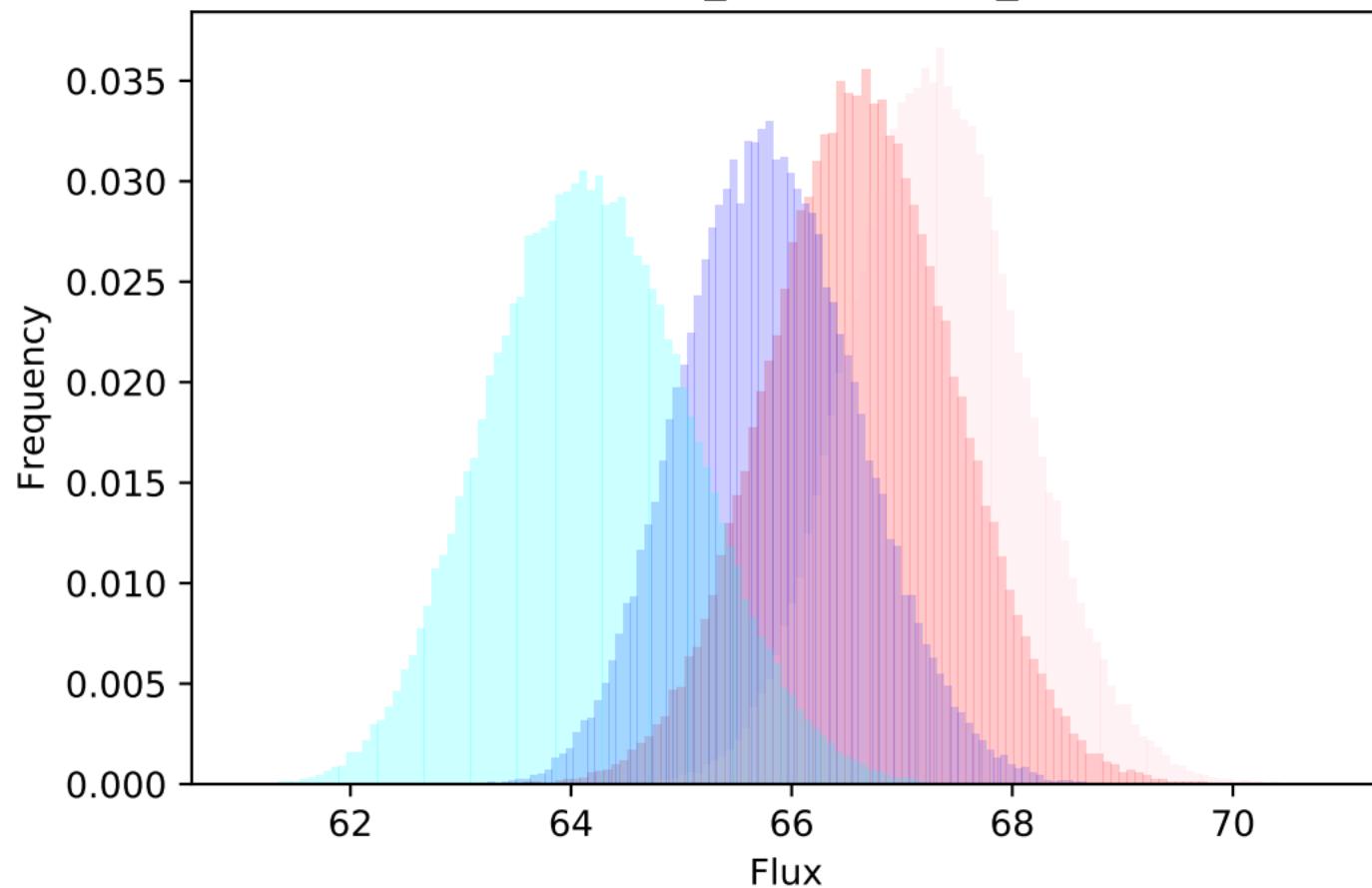




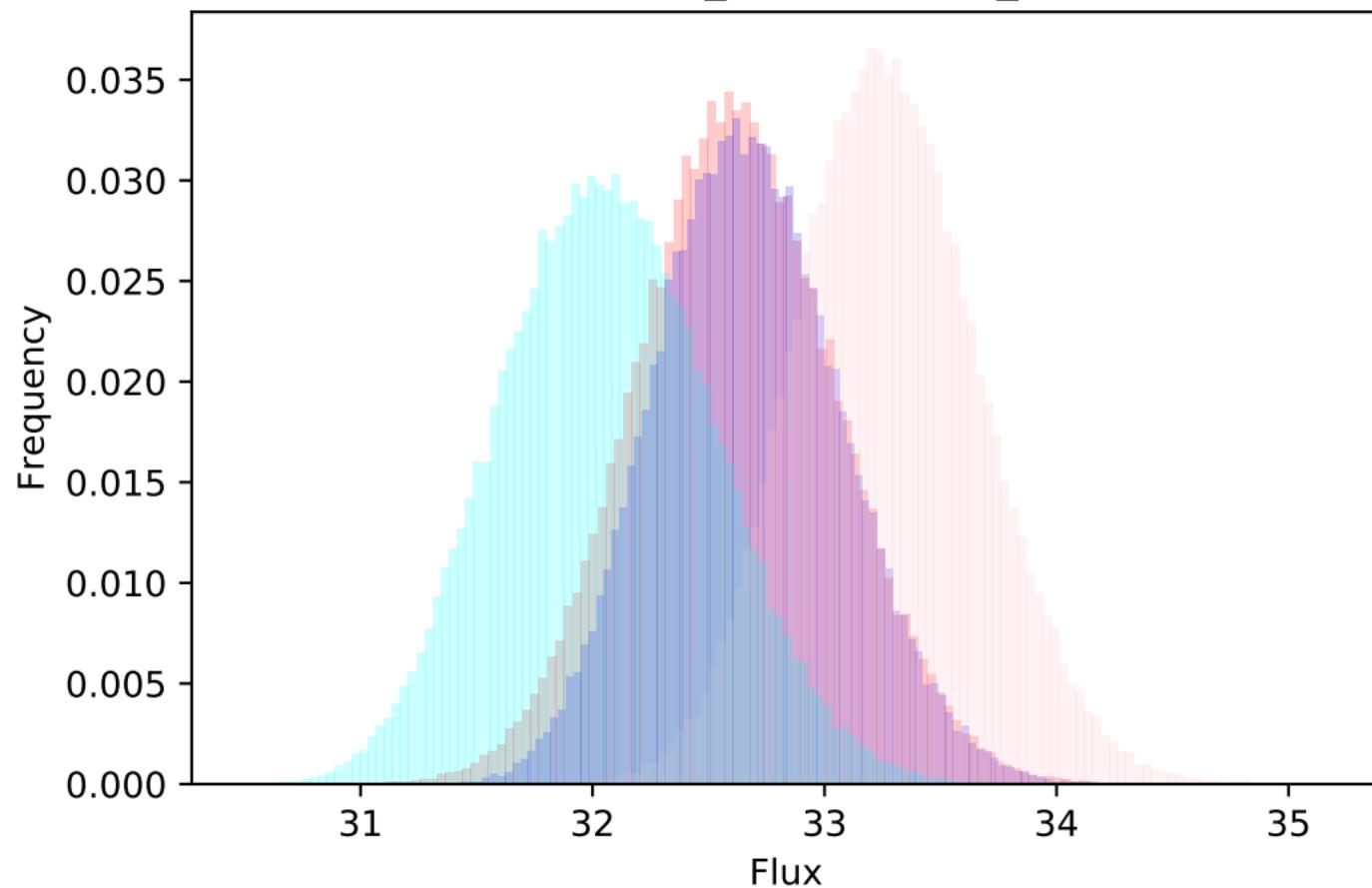
14 : GAP\_h + S7P\_h <=> R5P\_h + X5P\_h

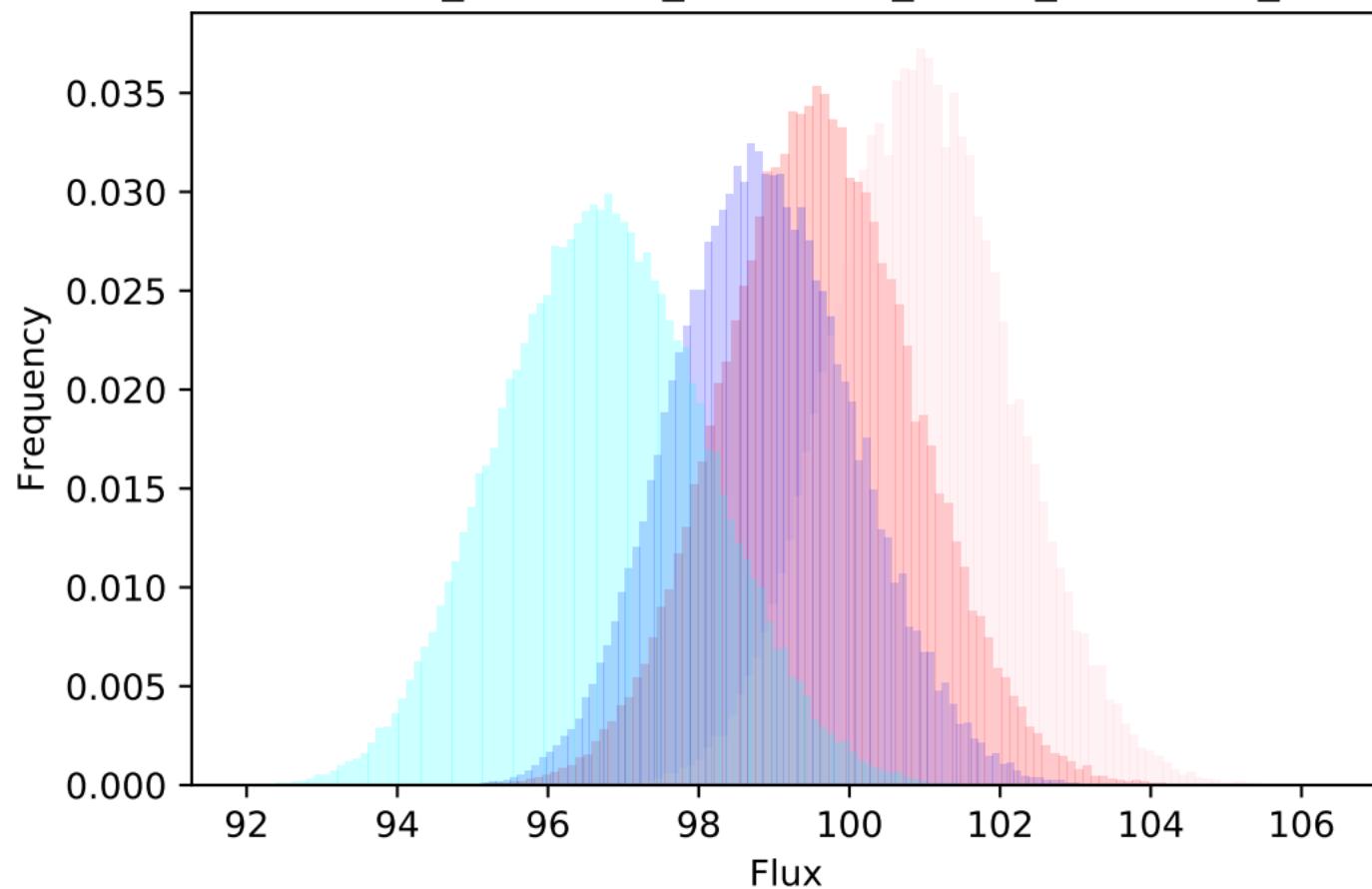
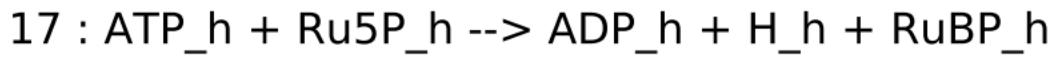


15 : X5P\_h <=> Ru5P\_h

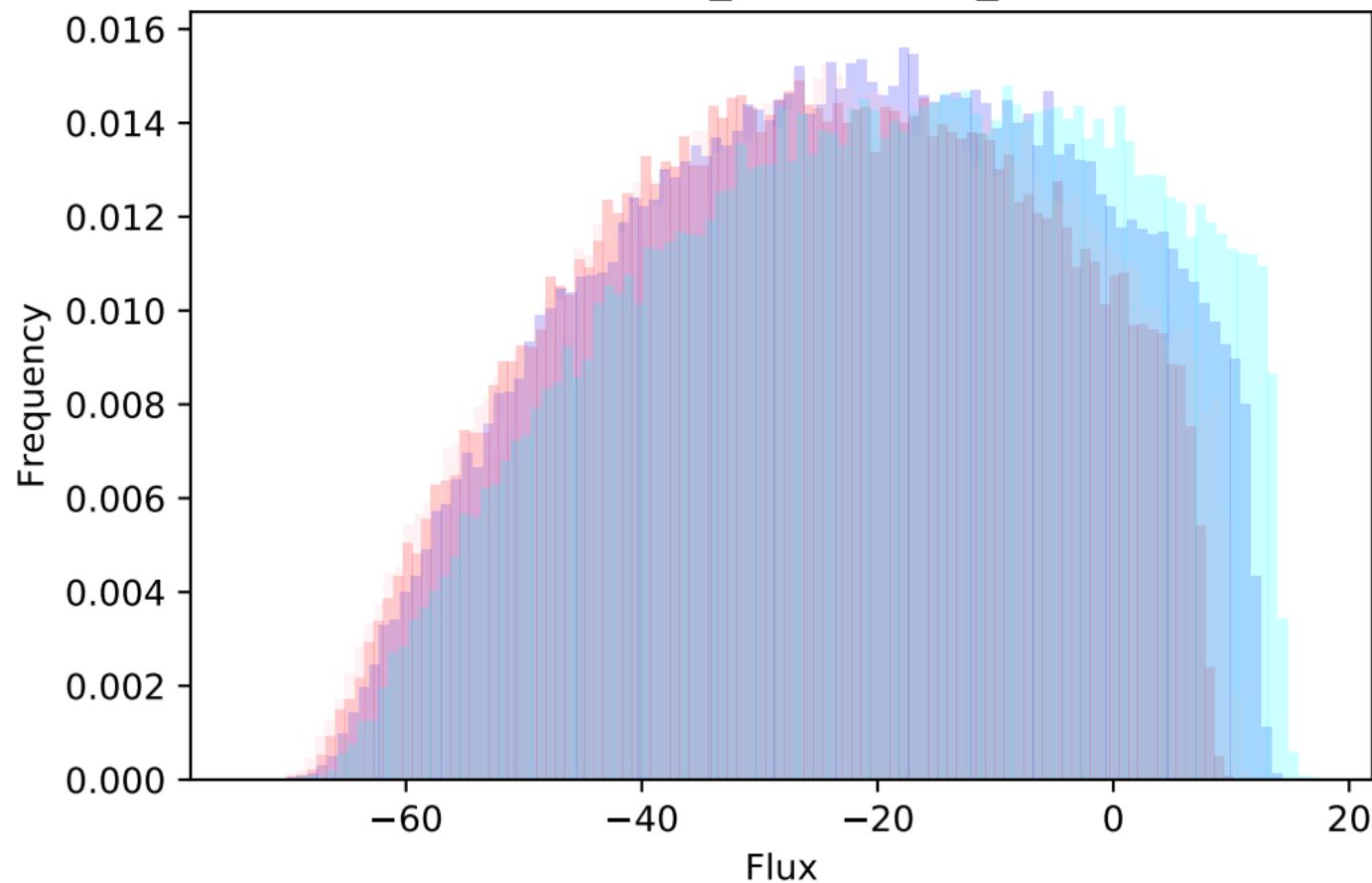


16 : R5P\_h <=> Ru5P\_h

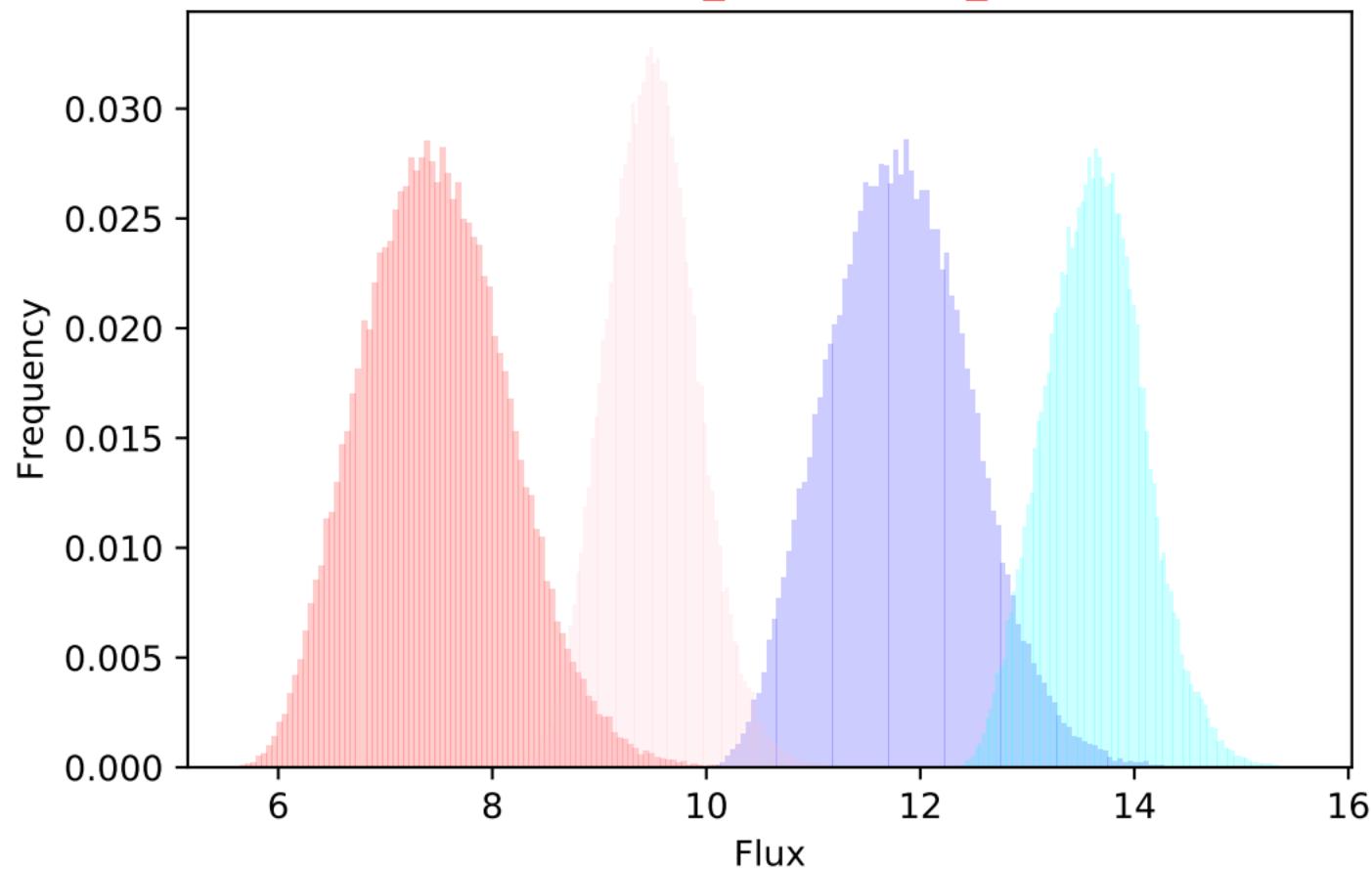




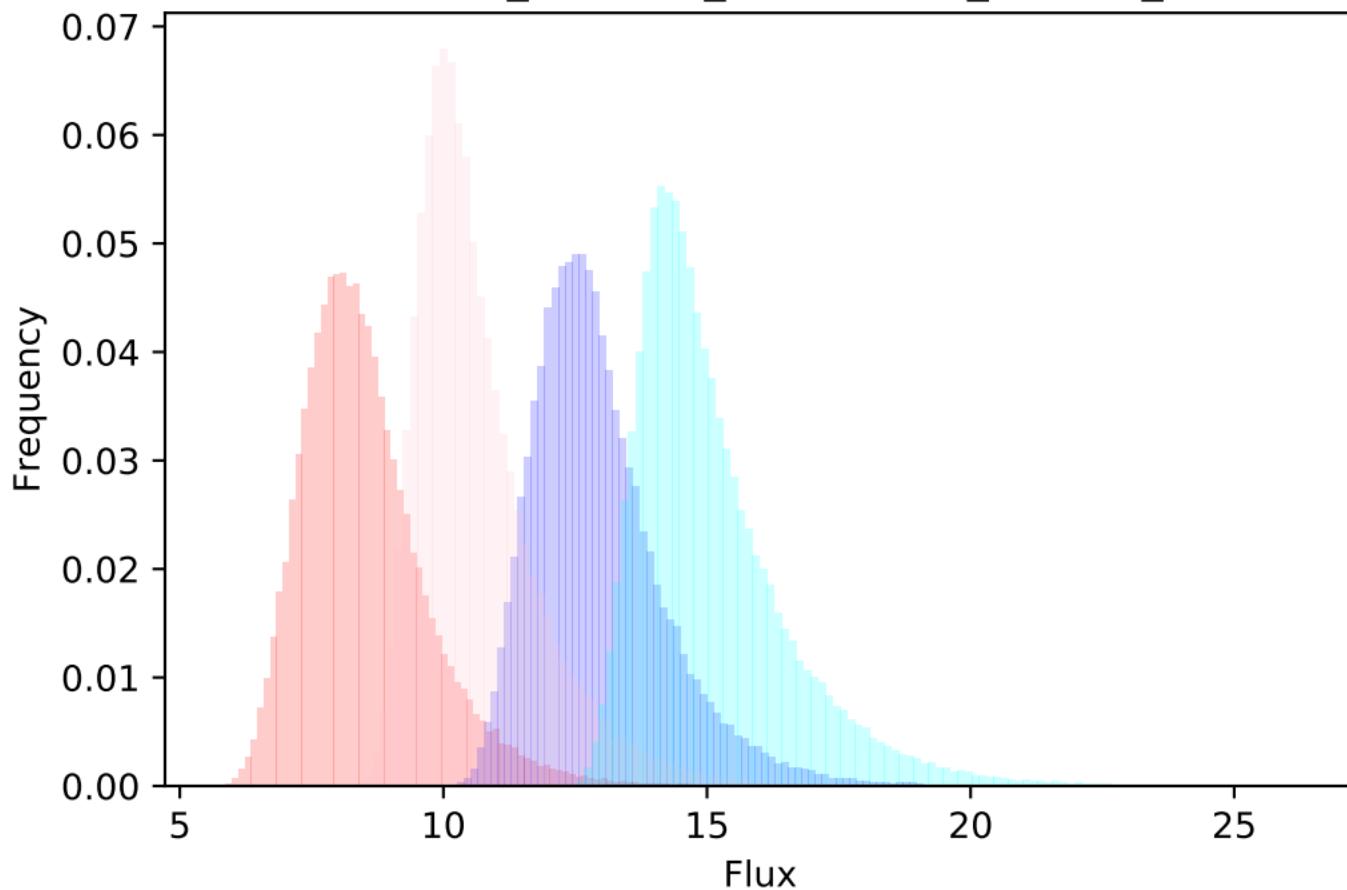
18 : F6P\_h <=> G6P\_h



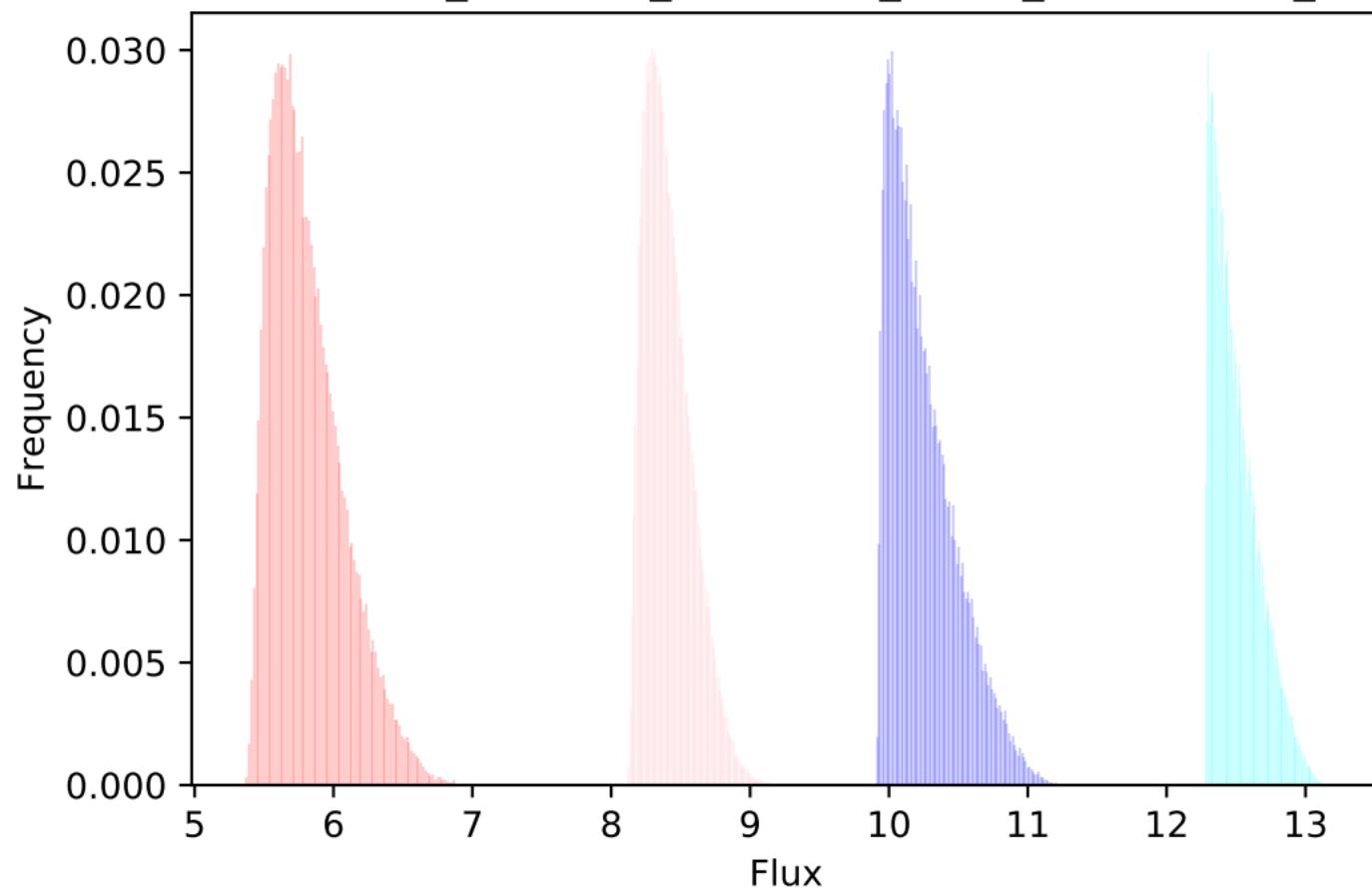
19 : G6P\_h <=> G1P\_h



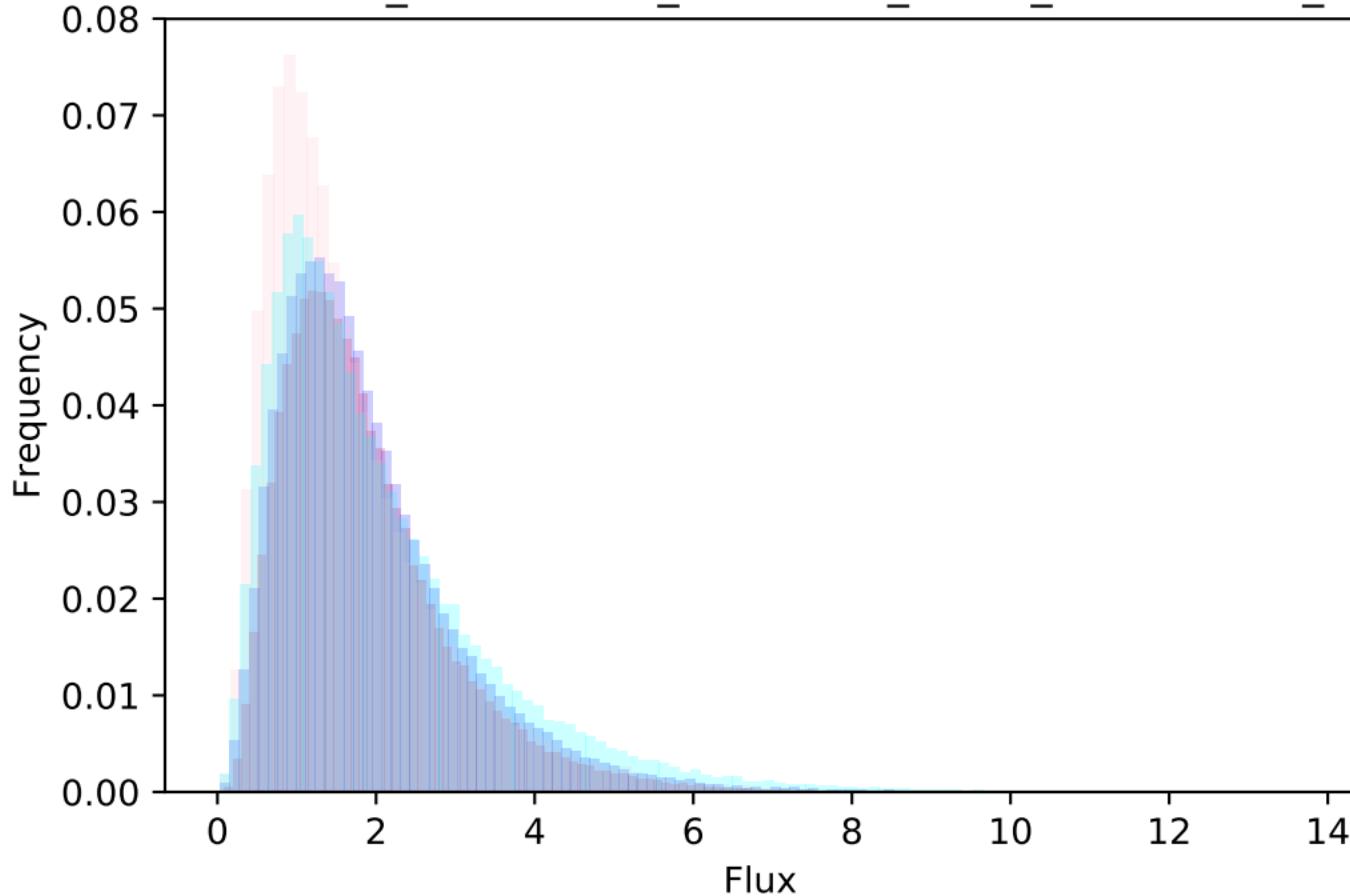
20 : ATP\_h + G1P\_h --> ADPG\_h + PPi\_h



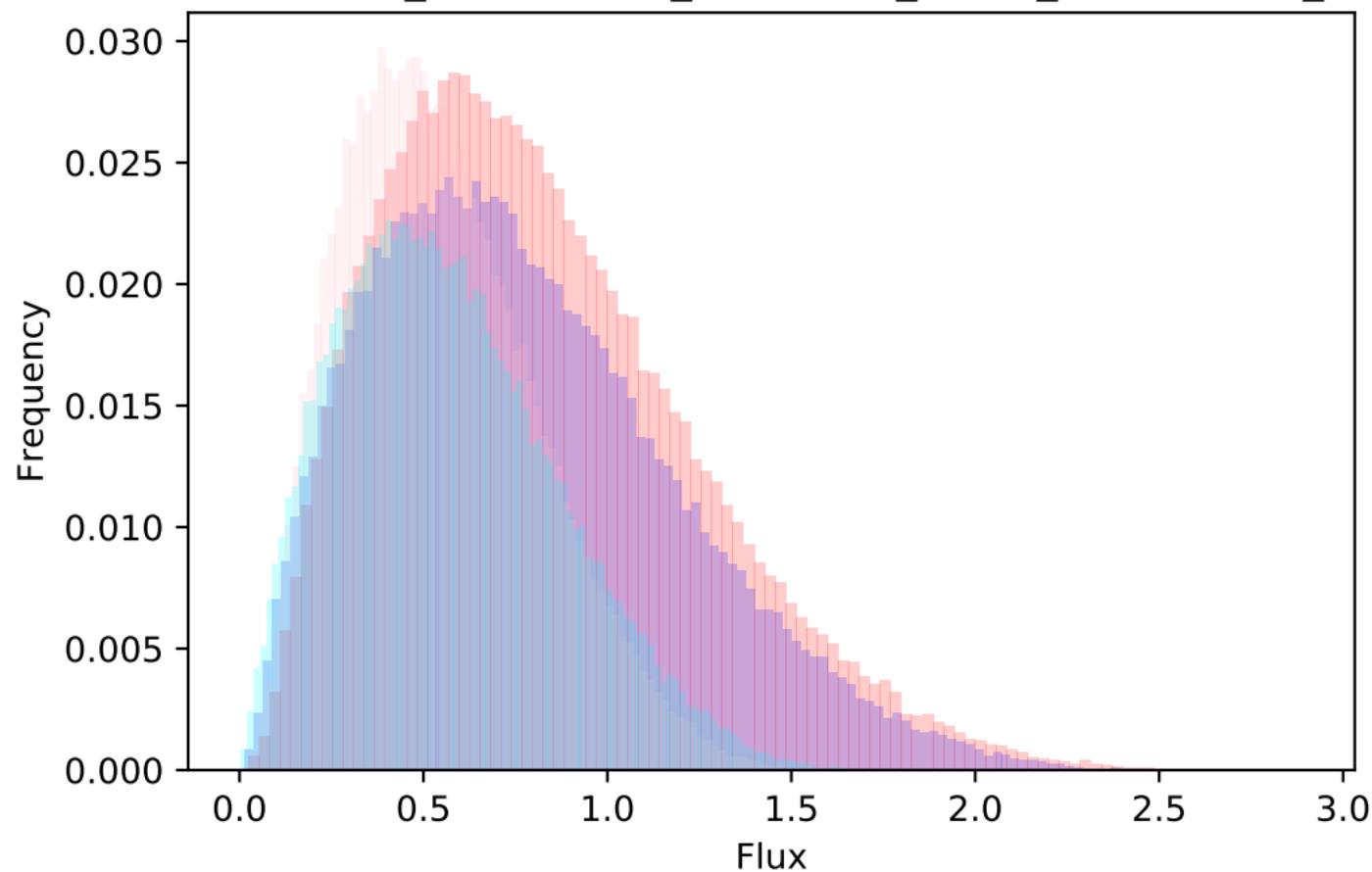
21 : ADPG\_h + H2O\_h --> ADP\_h + H\_h + starch1\_h



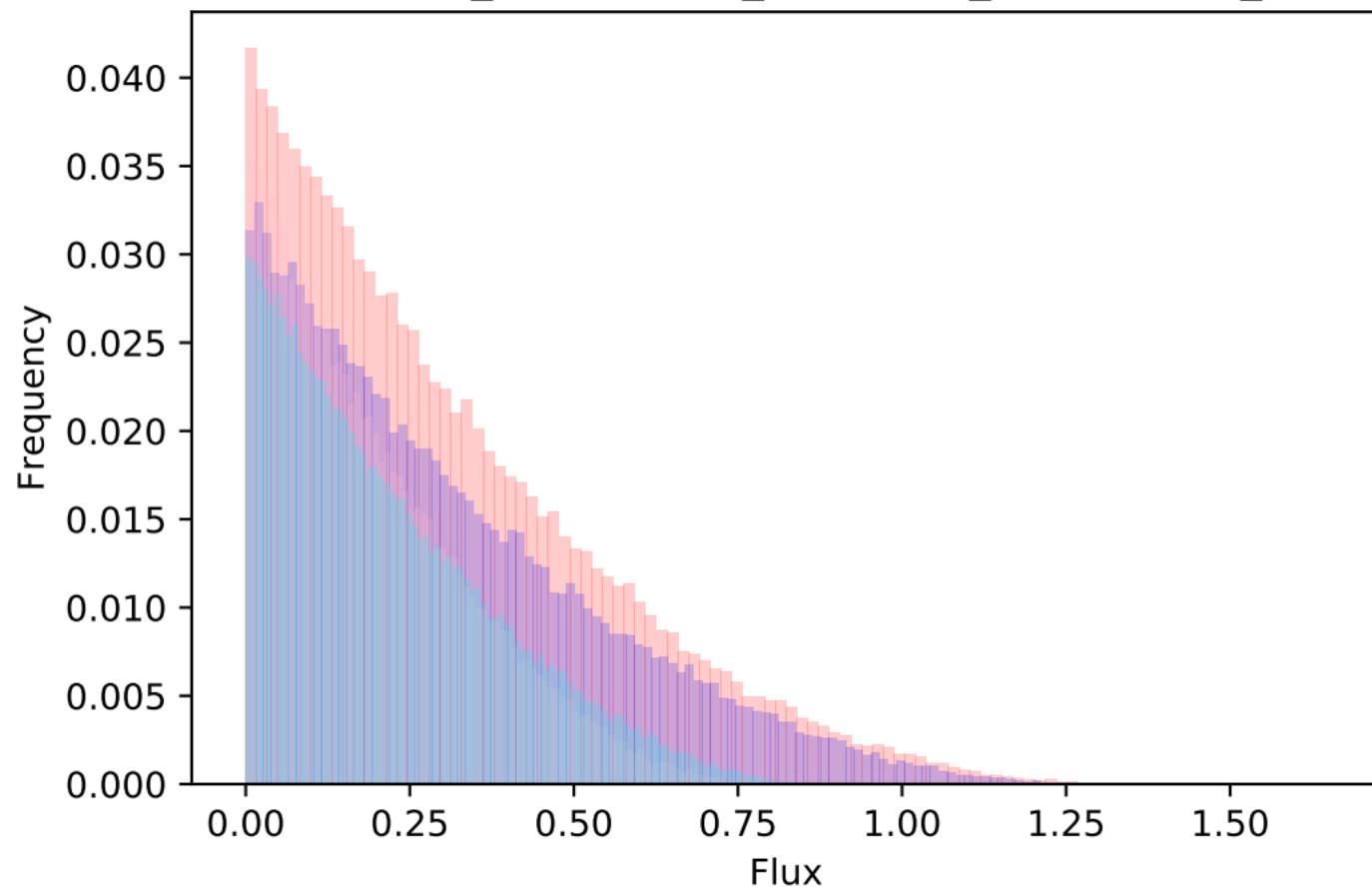
22 : ADPG\_h + starch1\_h --> ADP\_h + H\_h + starch2\_h



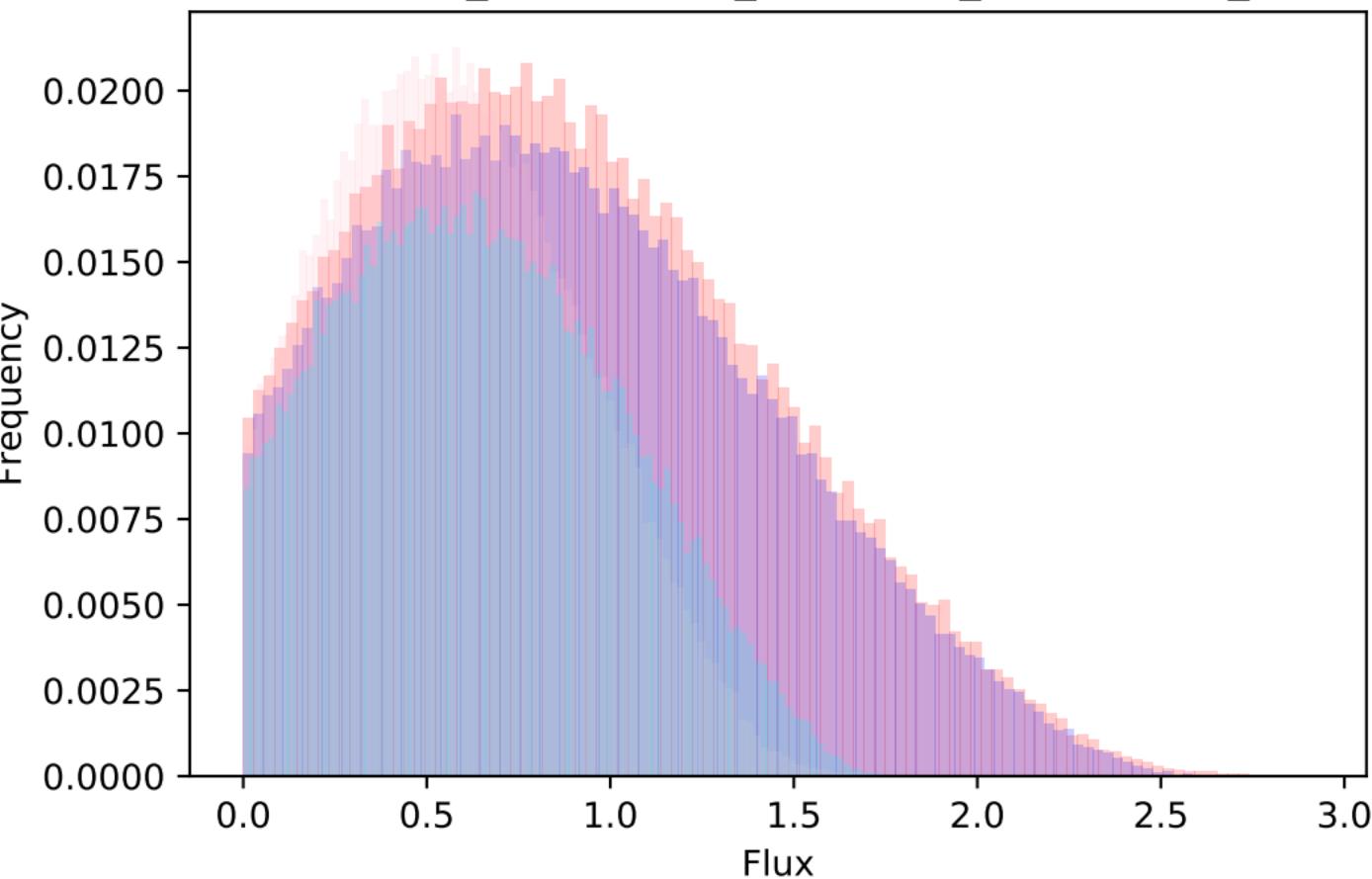
23 : ADPG\_h + starch2\_h --> ADP\_h + H\_h + starch3\_h



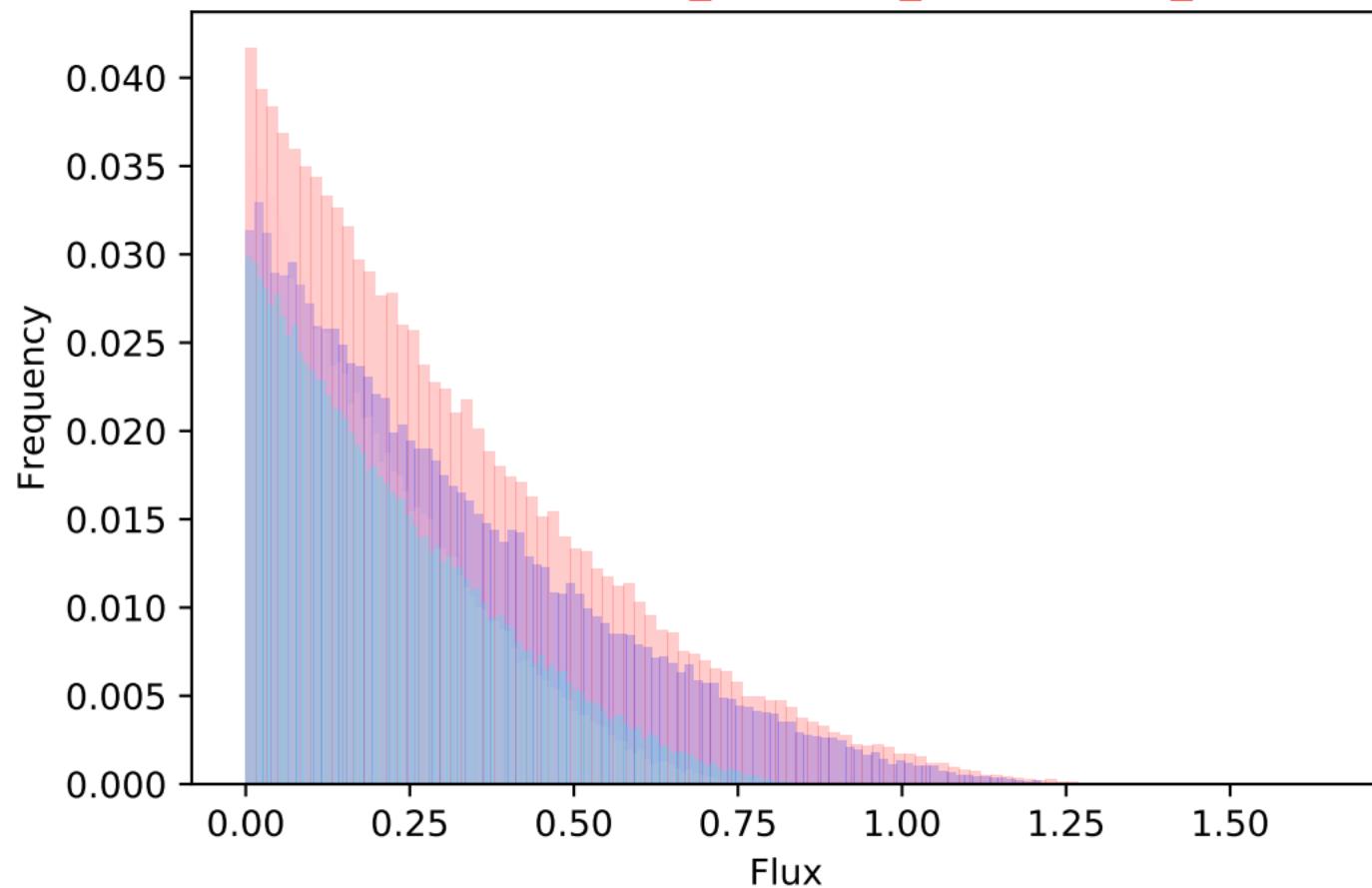
24 : H2O\_h + starch5\_h --> Mas\_h + starch3\_h



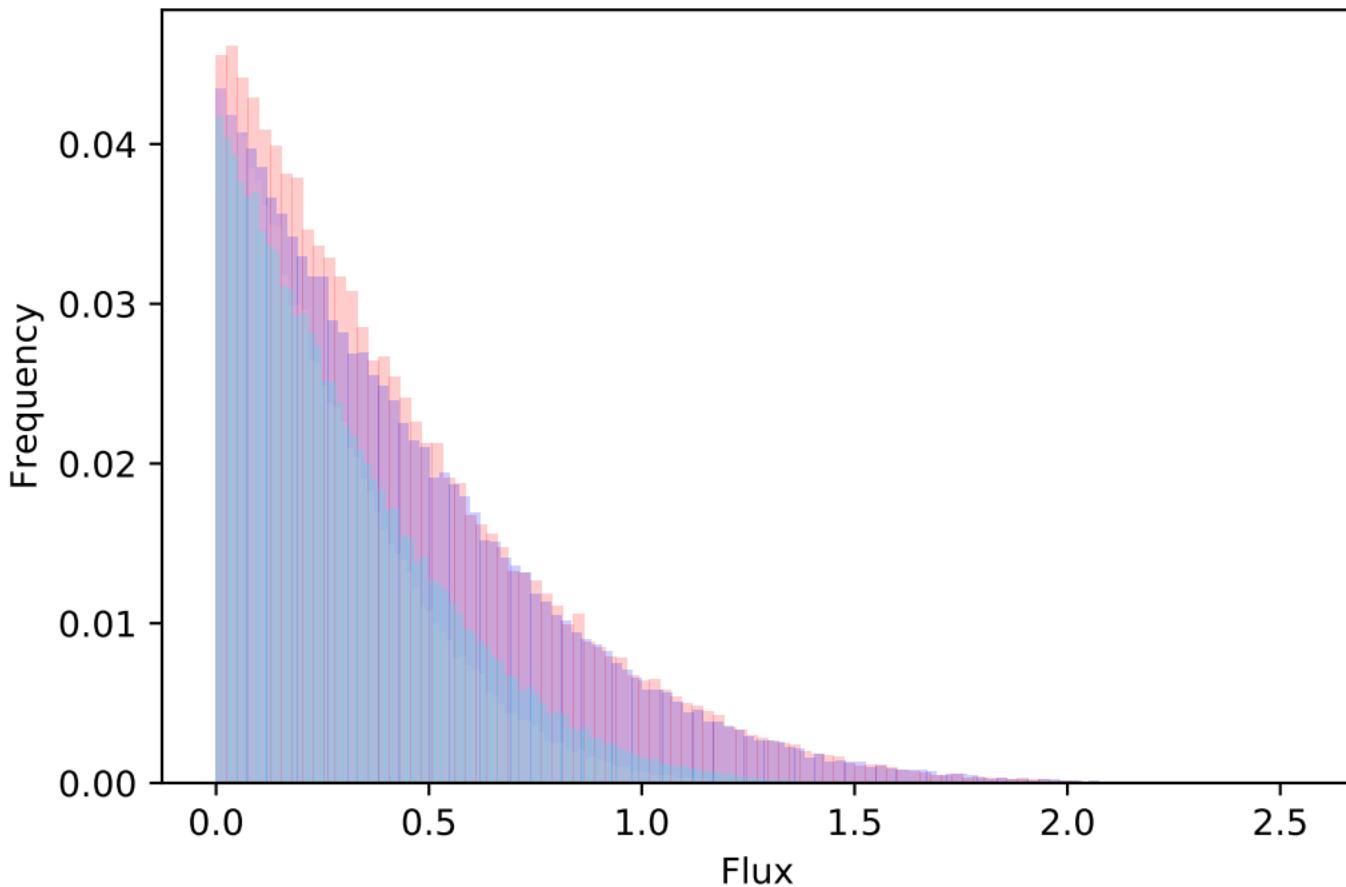
25 : H2O\_h + starch3\_h --> Mas\_h + starch1\_h



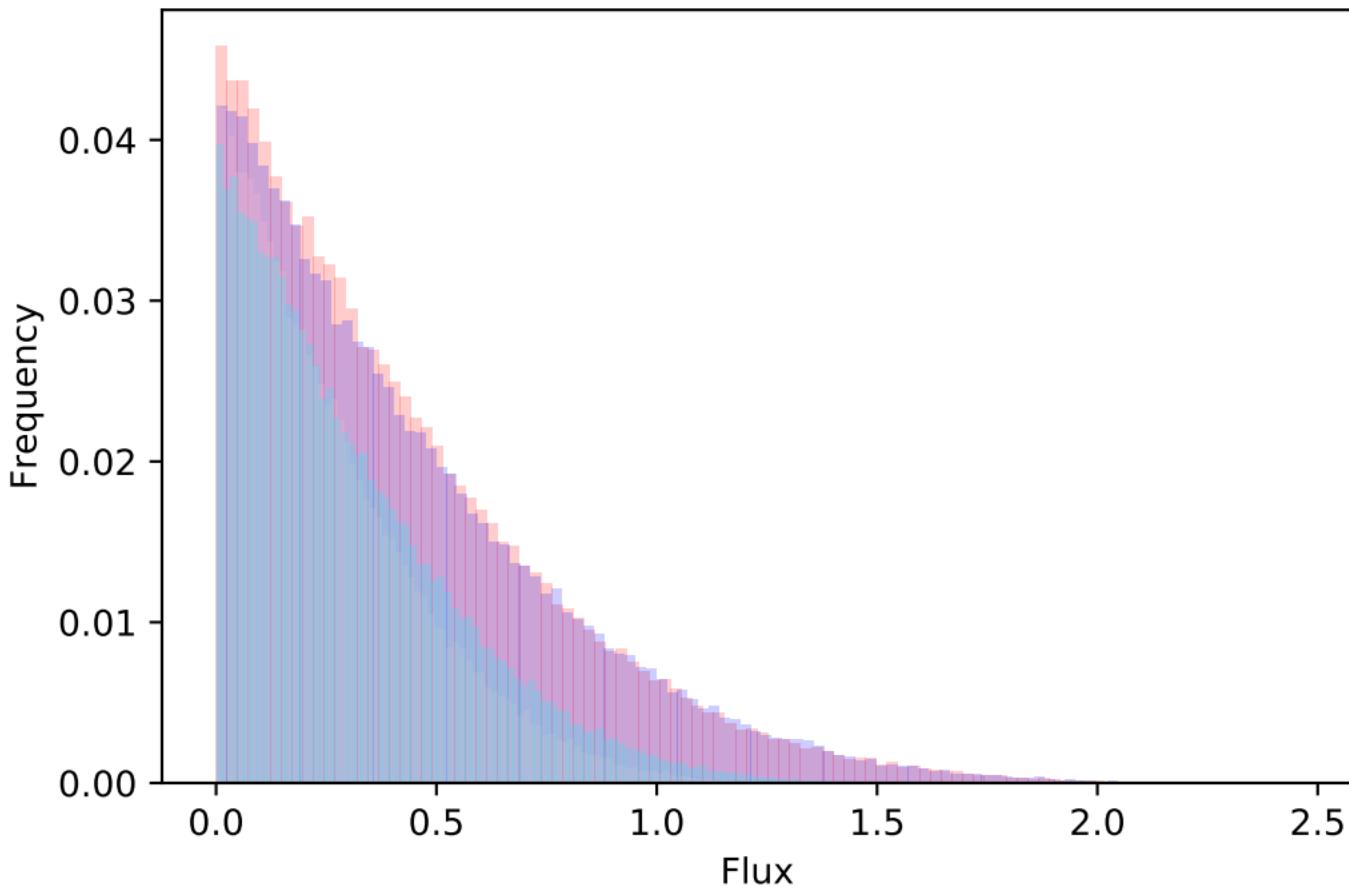
26 : 2.0 starch3\_h --> Glc\_h + starch5\_h



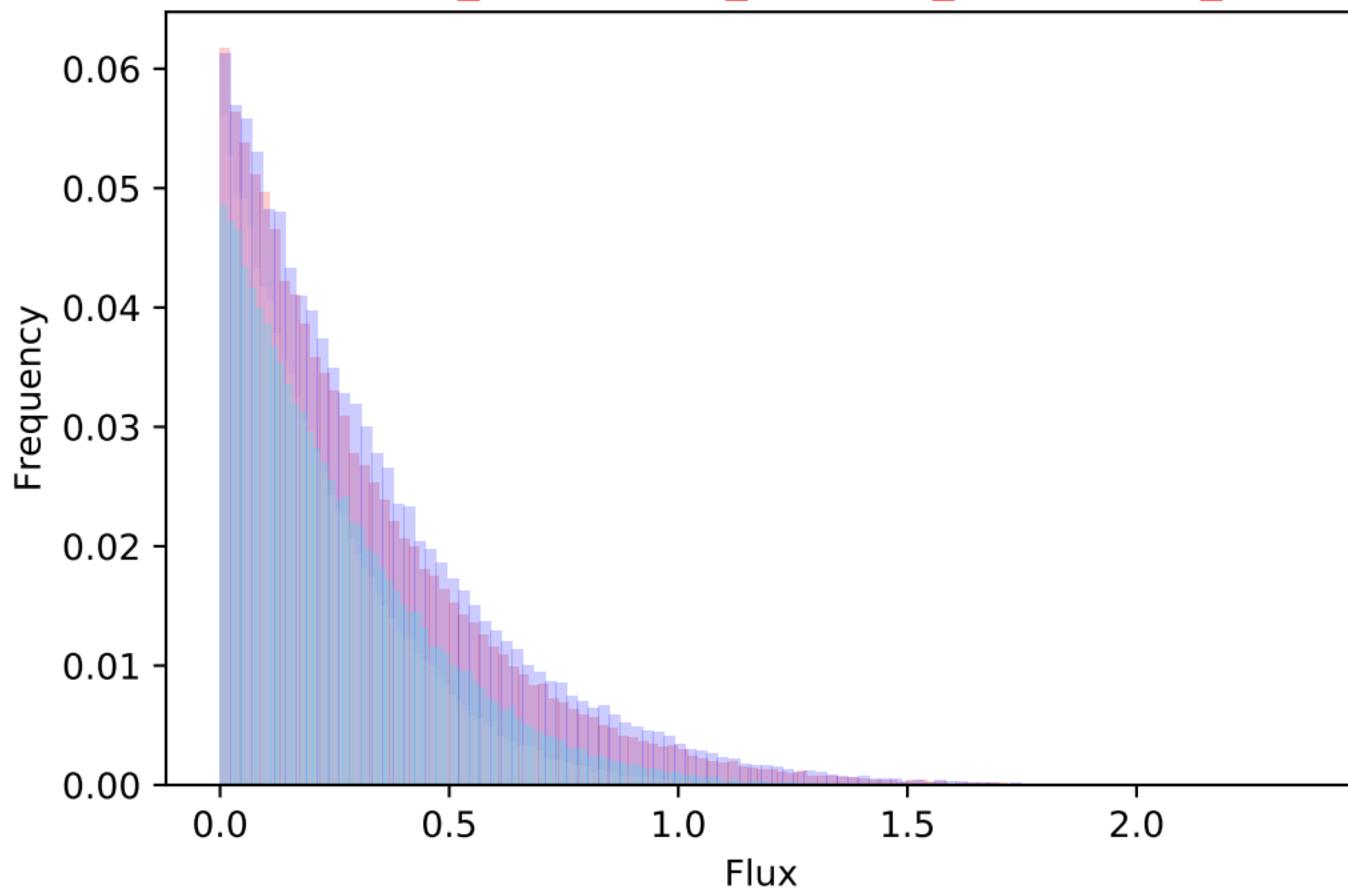
27 :  $\text{Mas\_h} + \text{starch1\_h} \rightarrow \text{Glc\_h} + \text{starch2\_h}$



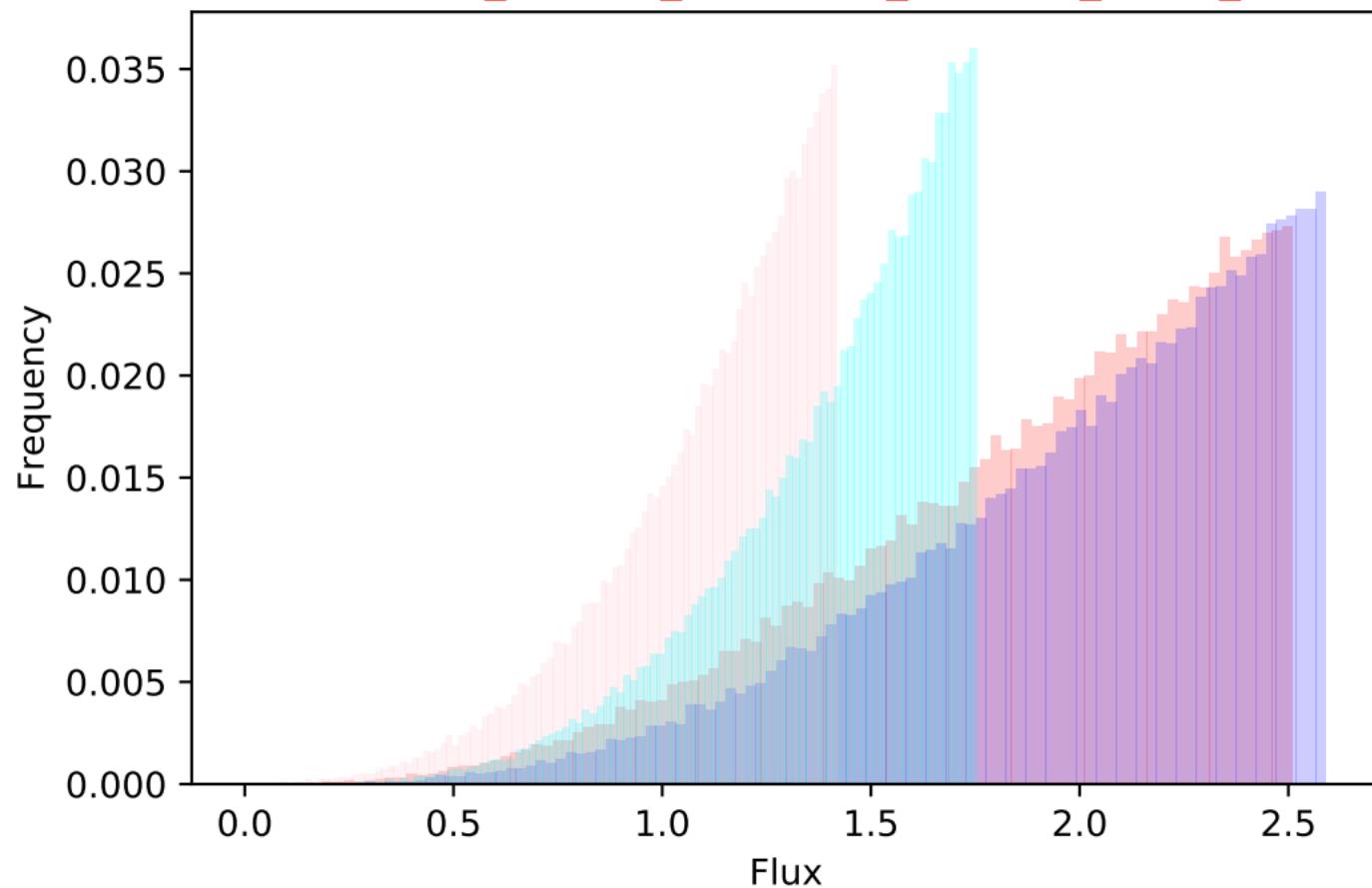
28 :  $\text{Mas\_h} + \text{starch2\_h} \rightarrow \text{Glc\_h} + \text{starch3\_h}$



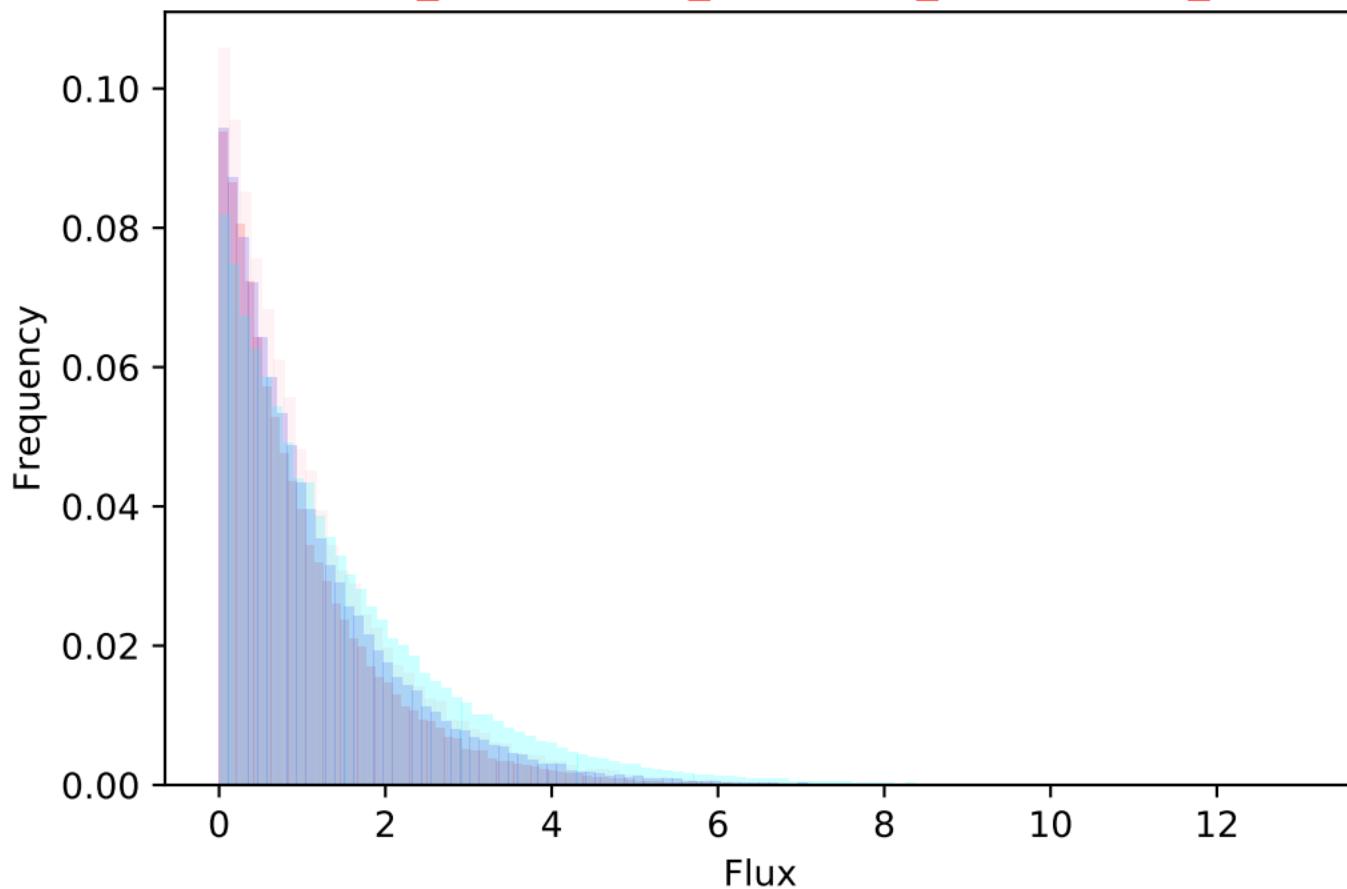
29 : Mas\_c + starch1\_c --> Glc\_c + starch2\_c



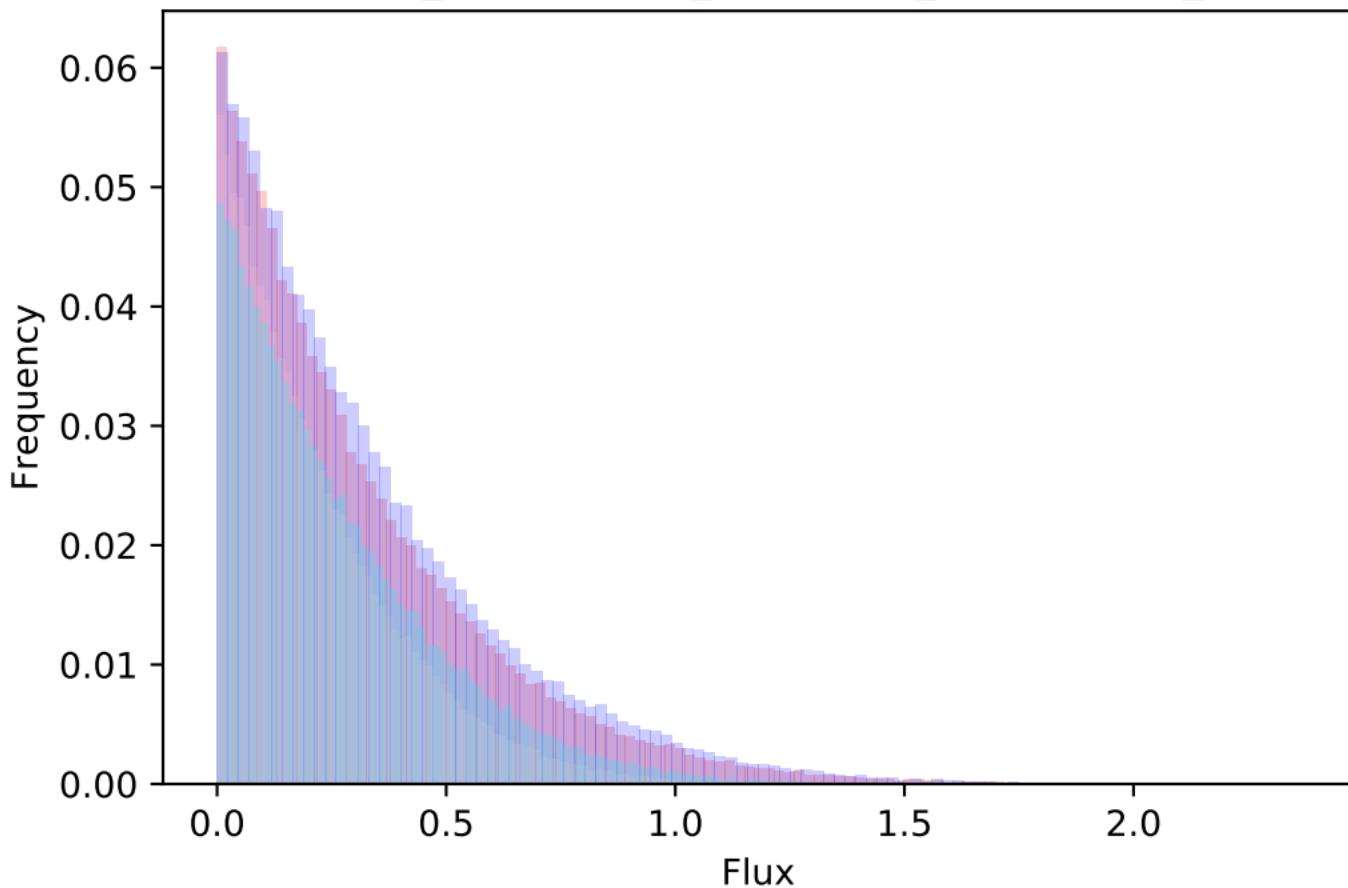
$30 : \text{ATP\_c} + \text{Glc\_c} \rightarrow \text{ADP\_c} + \text{G6P\_c} + \text{H\_c}$



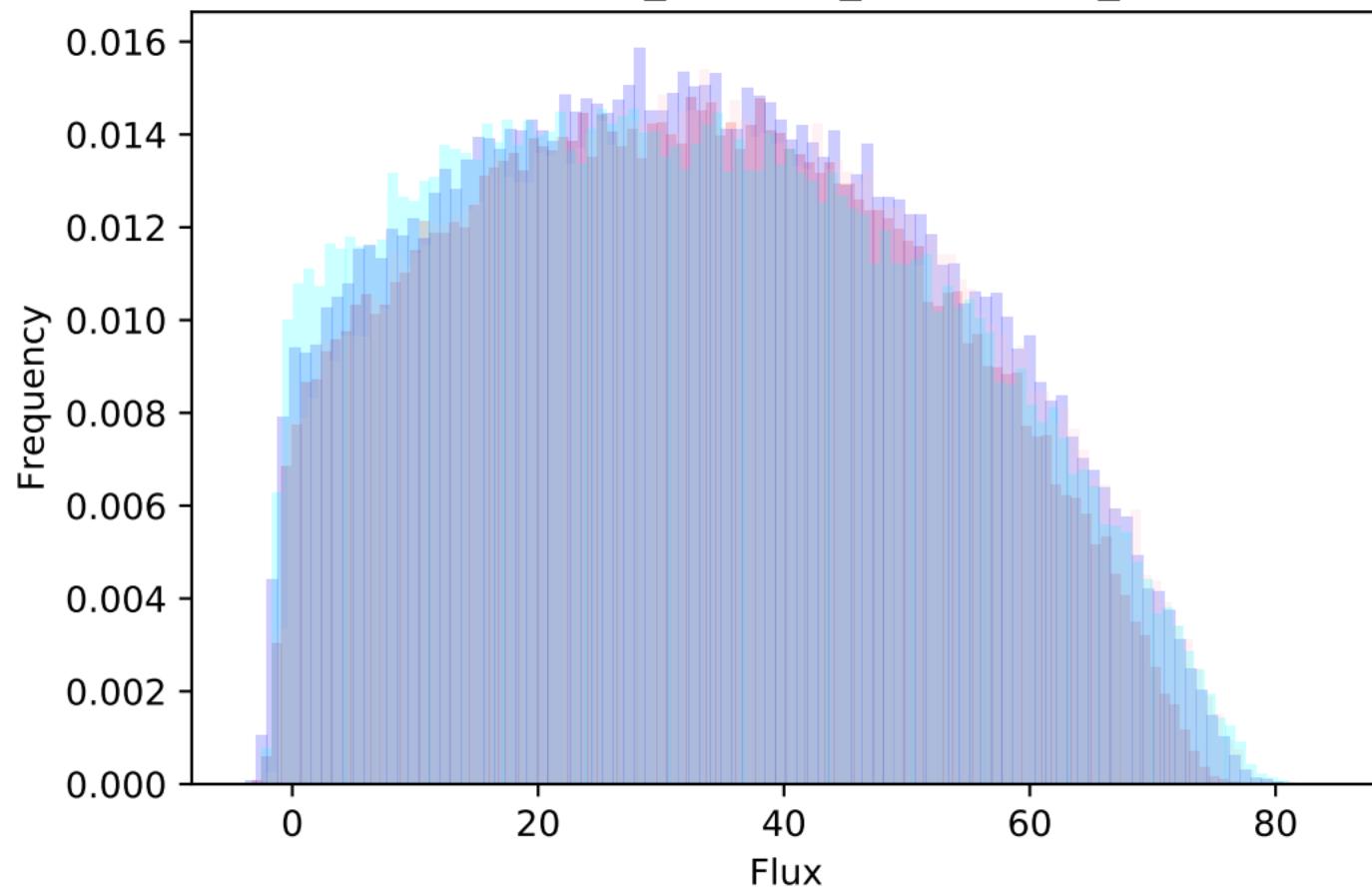
31 : Pi\_h + starch2\_h --> G1P\_h + starch1\_h

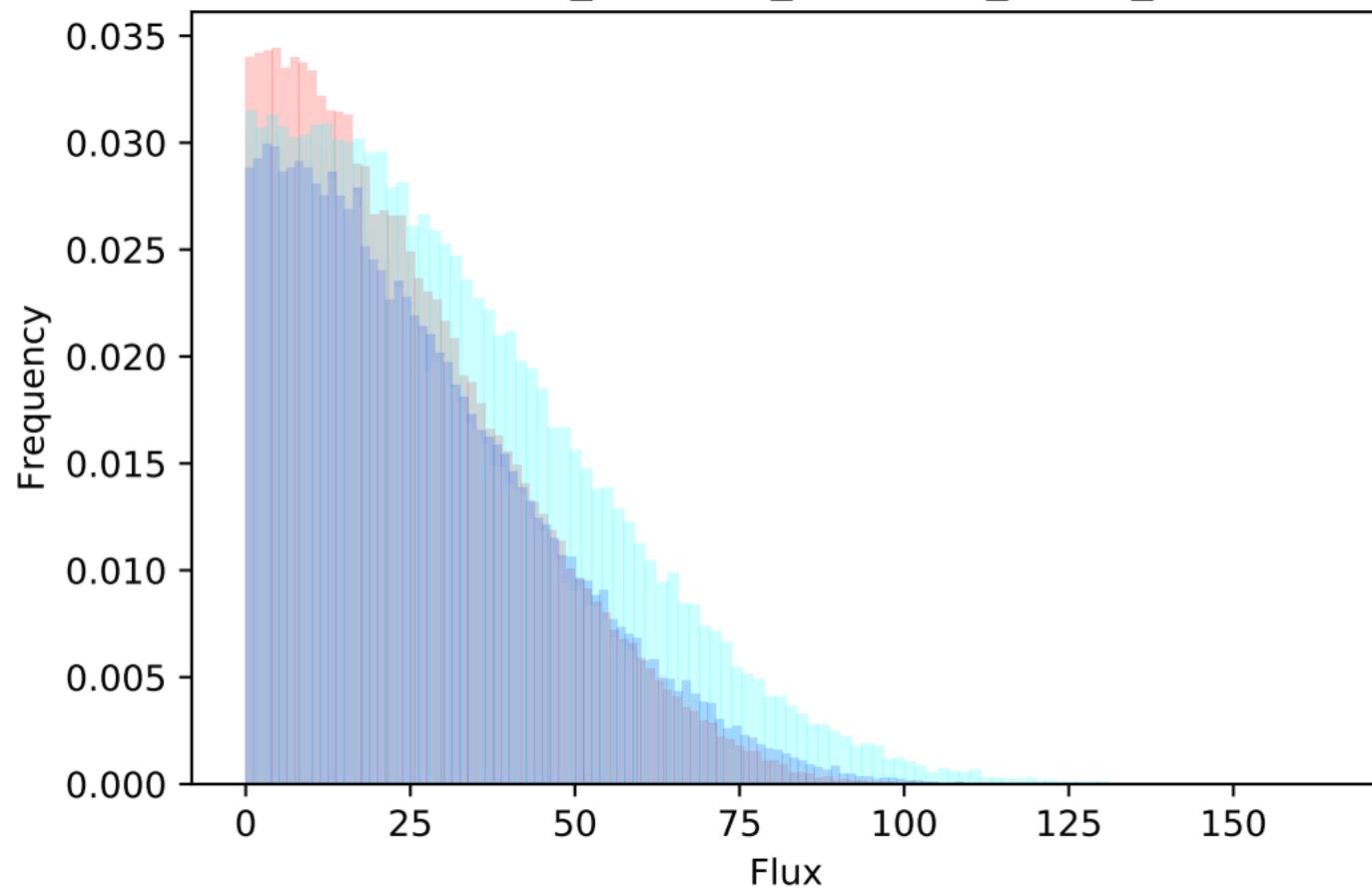


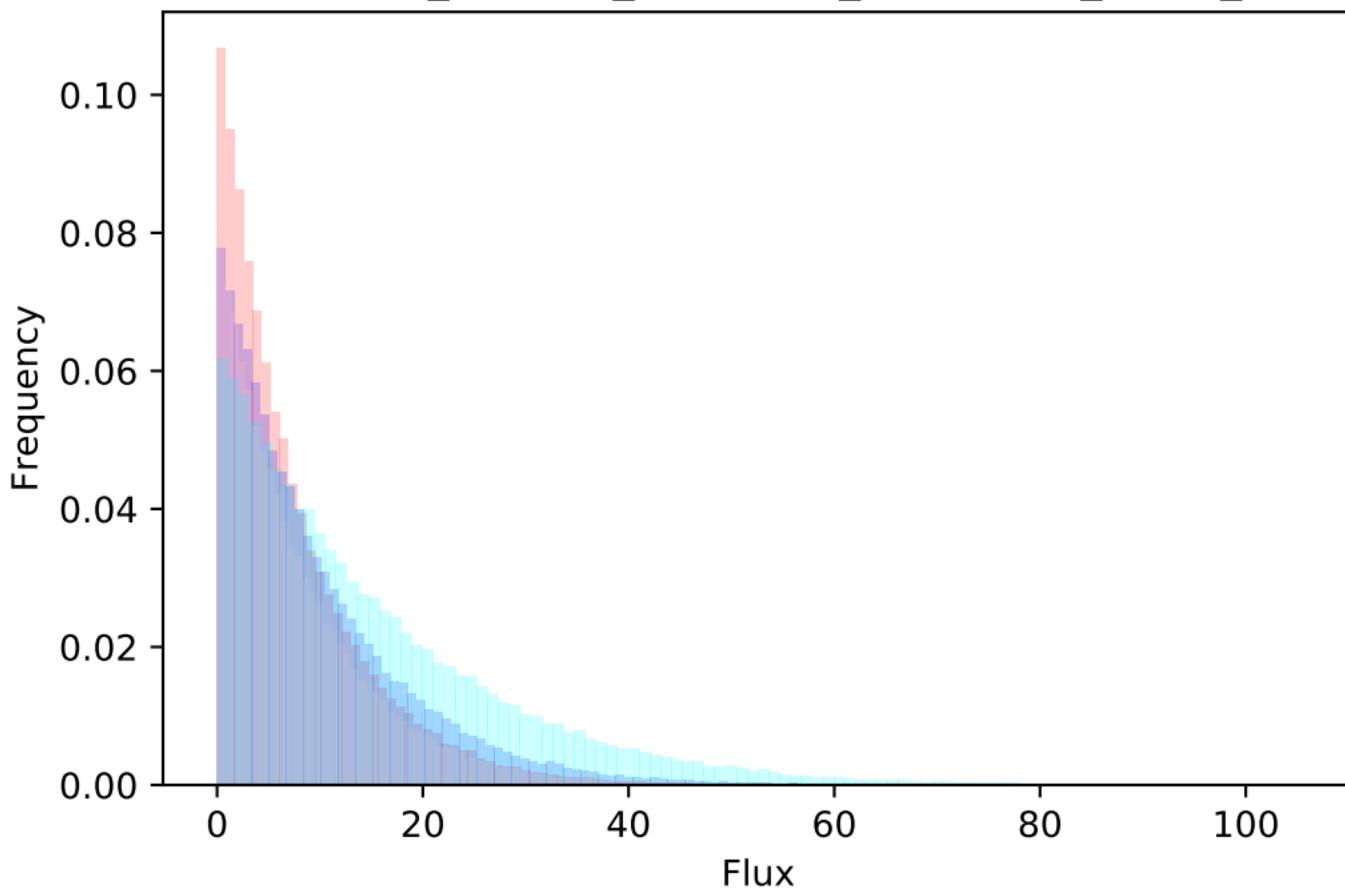
32 :  $\text{Pi\_c} + \text{starch2\_c} \rightarrow \text{G1P\_c} + \text{starch1\_c}$

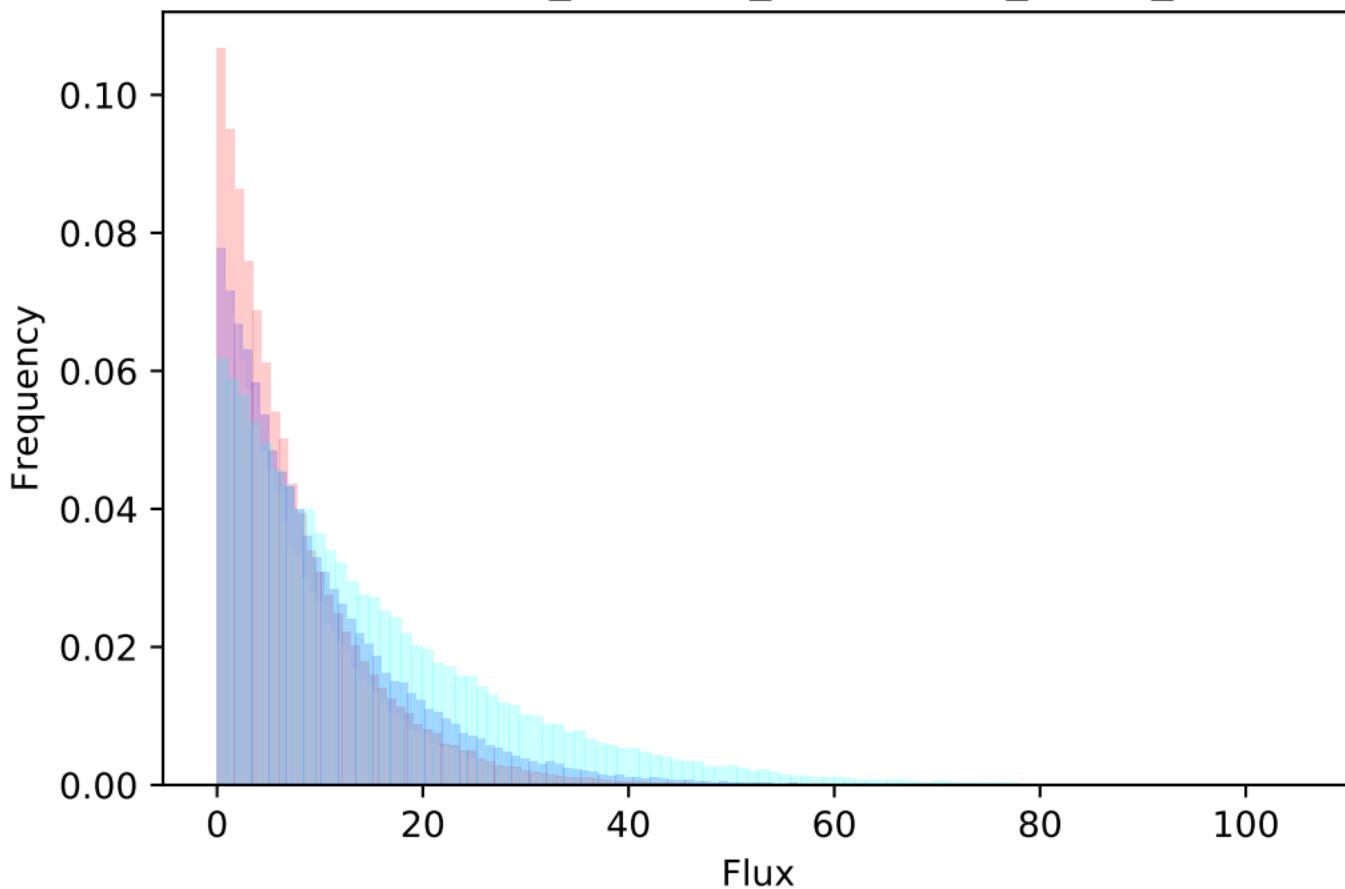


34 : DHAP\_c + GAP\_c <=> FBP\_c

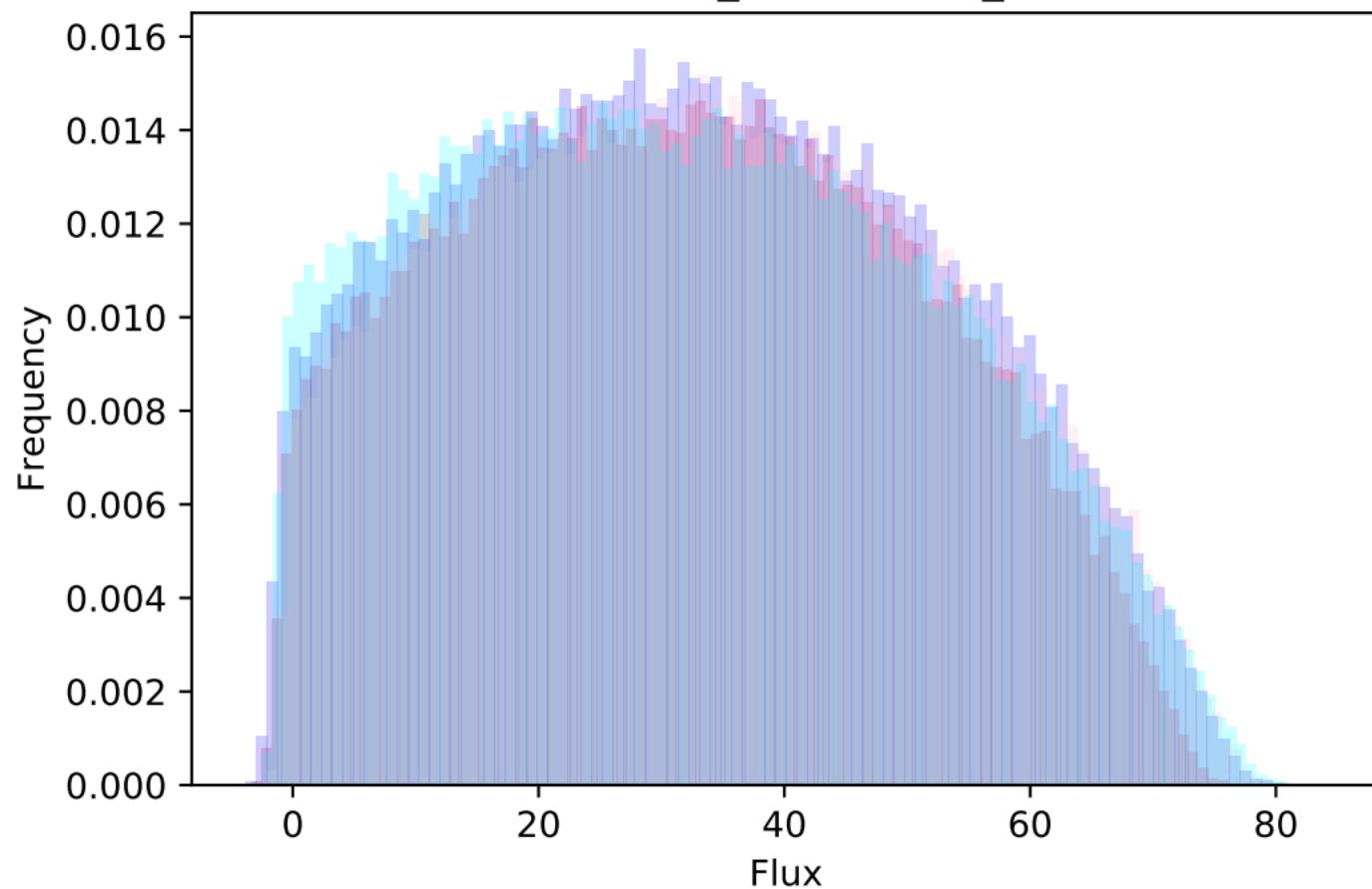




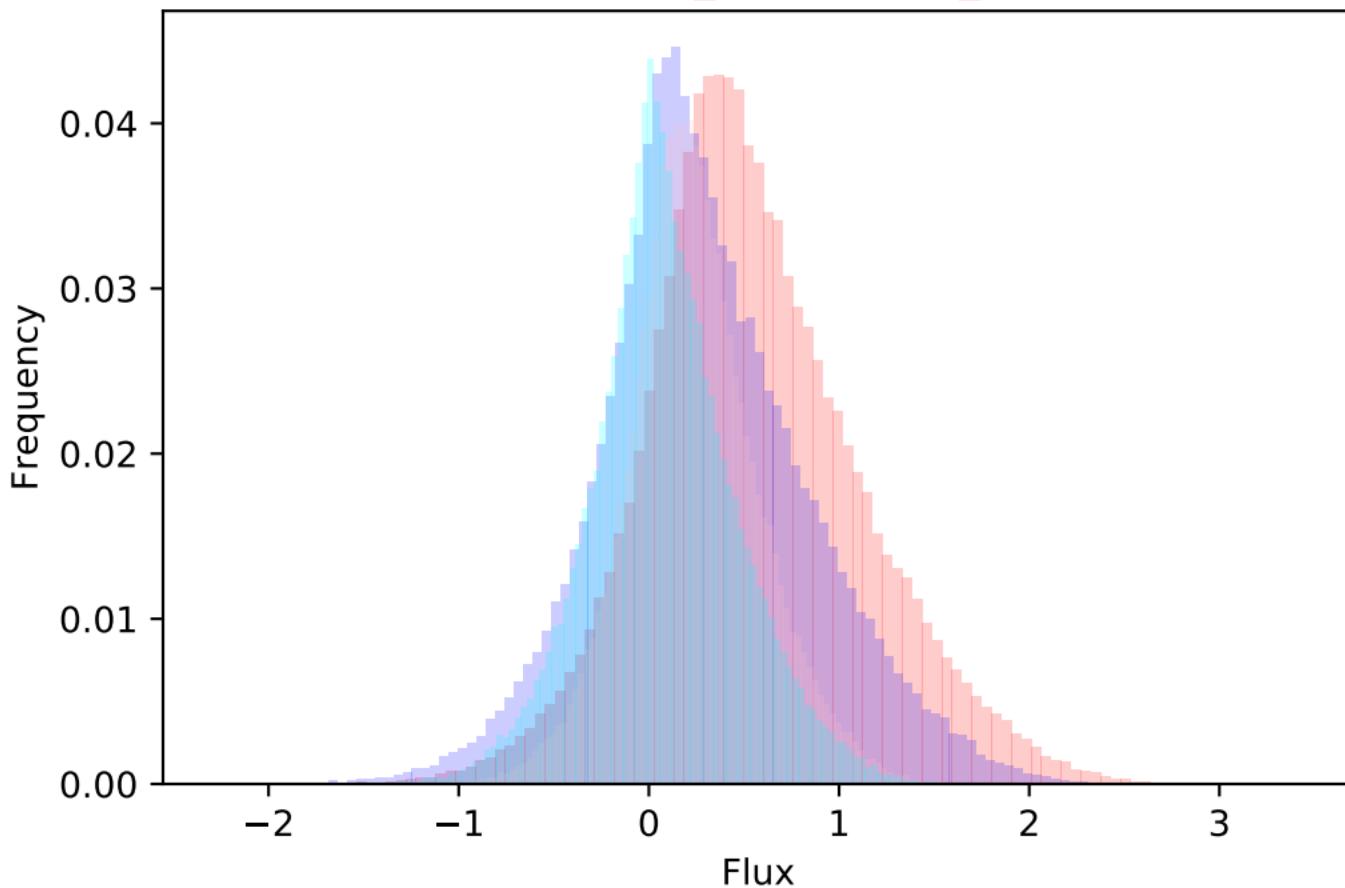


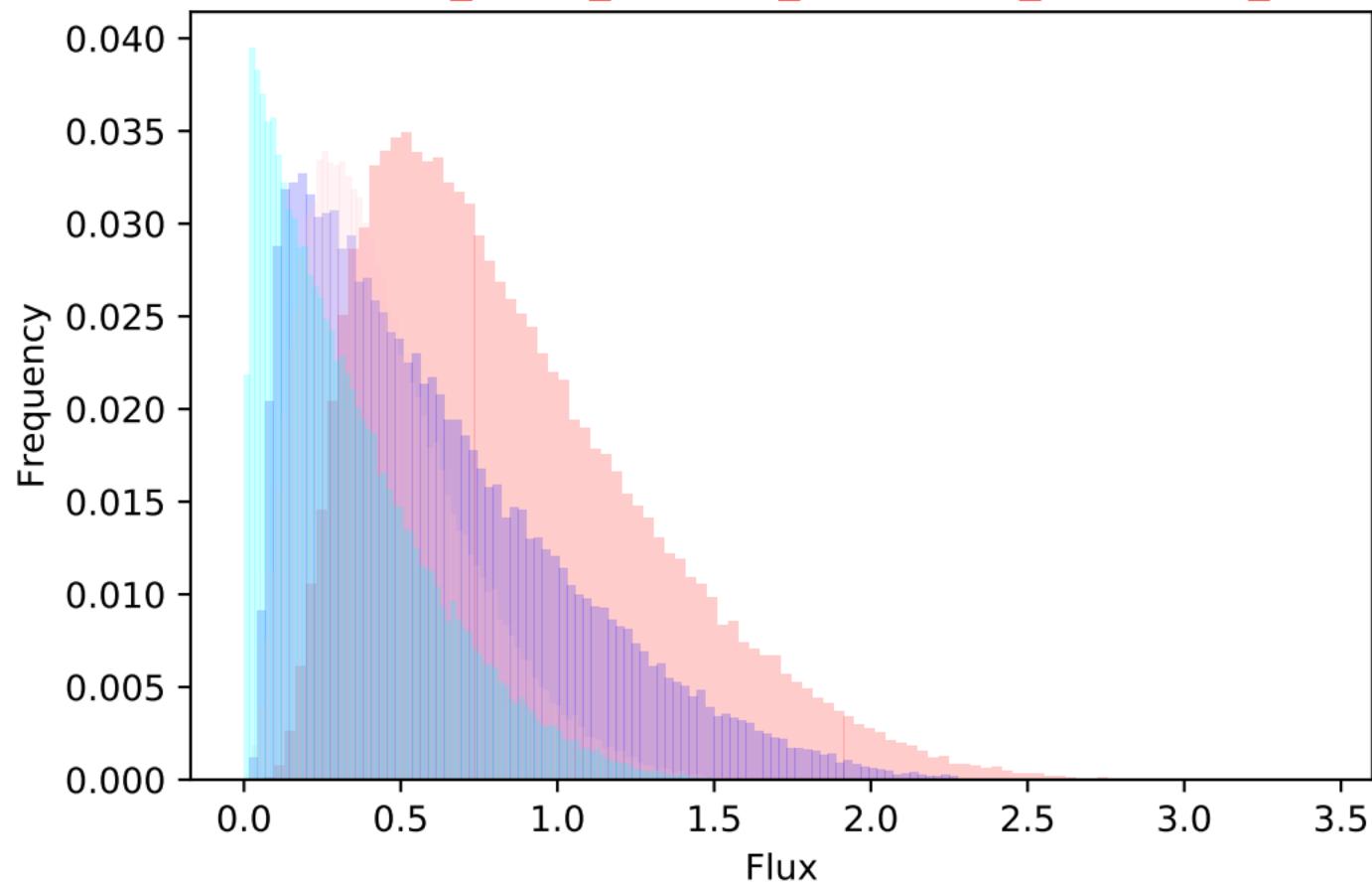


38 : F6P\_c <=> G6P\_c

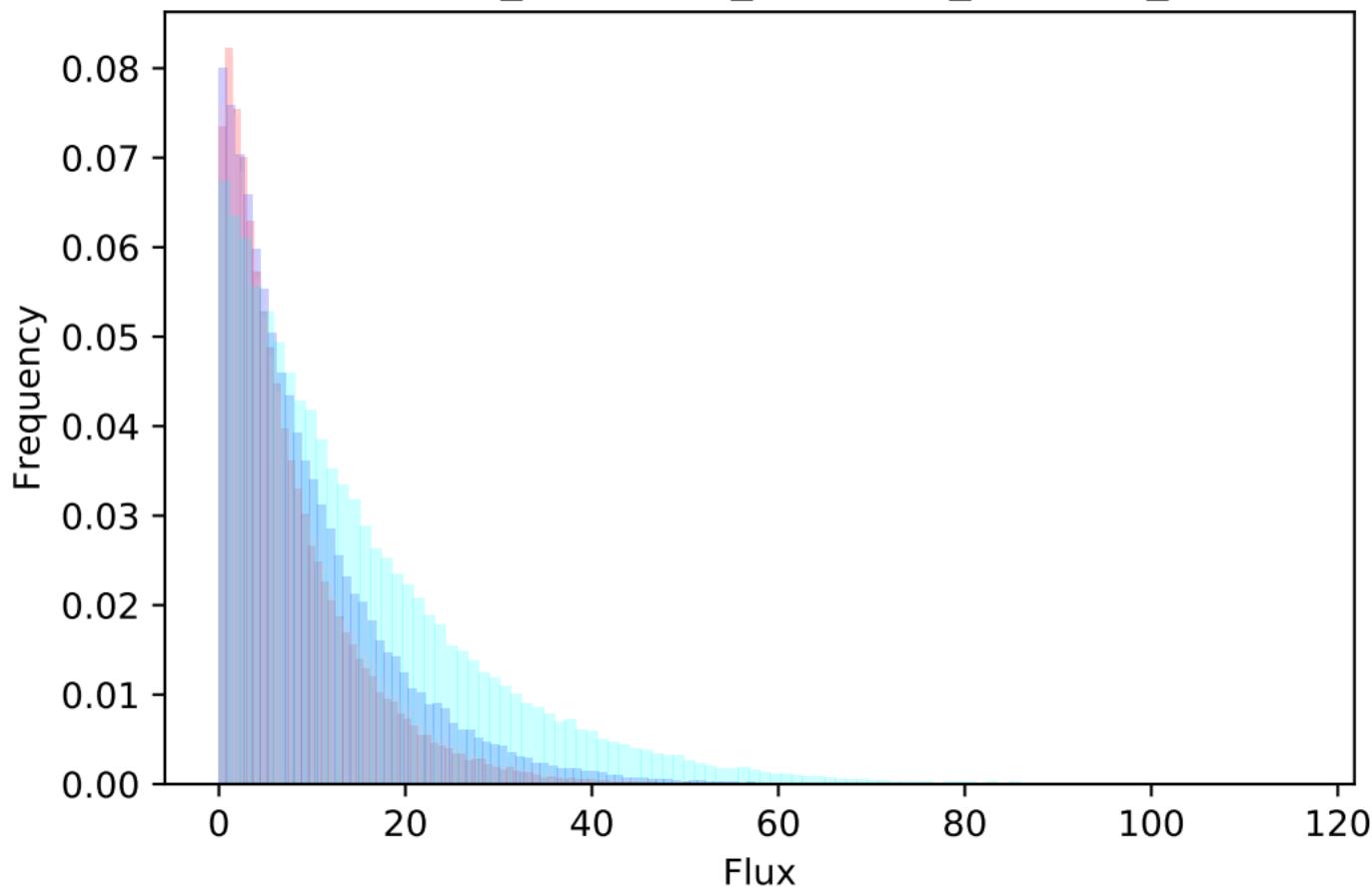


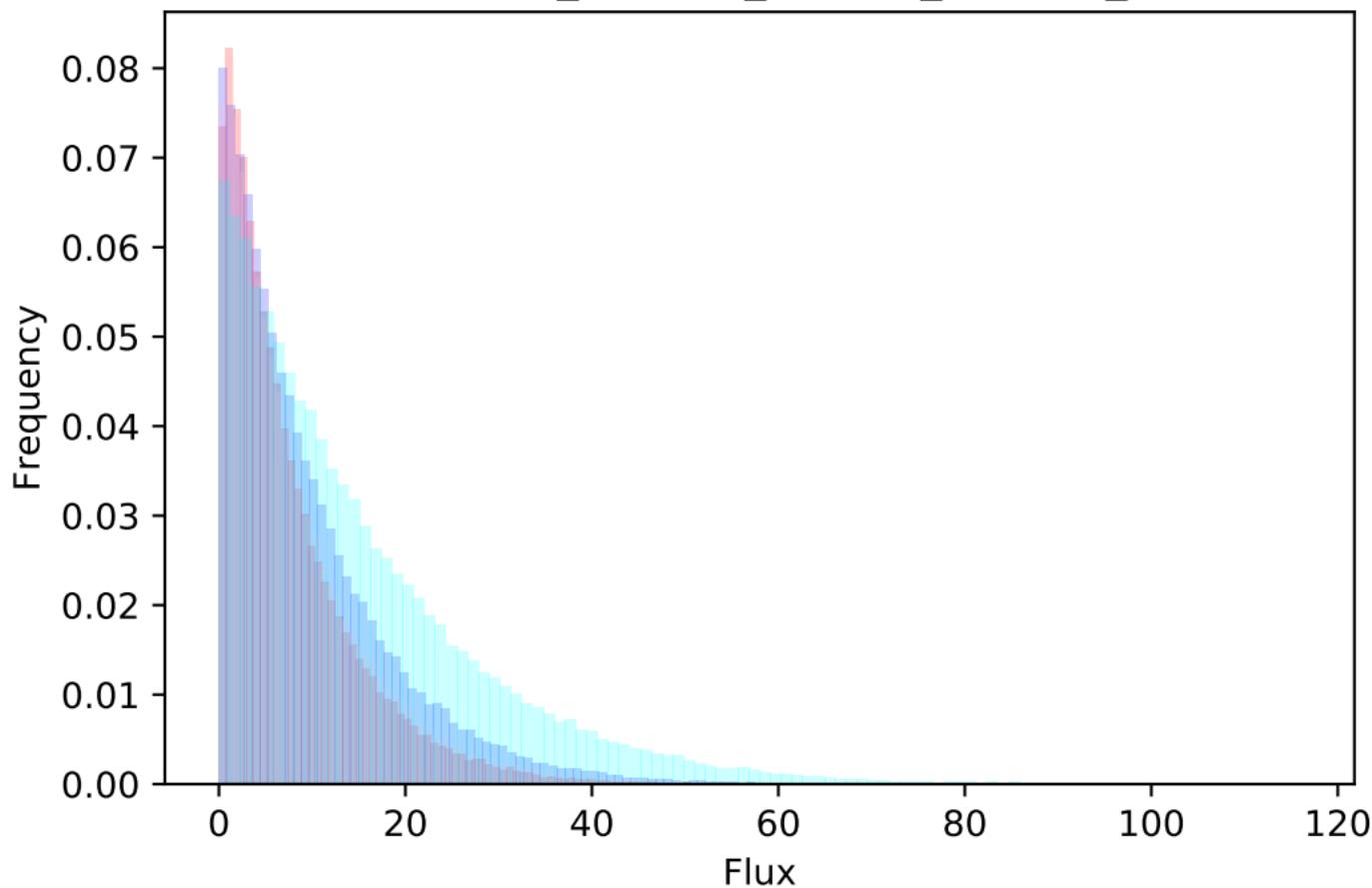
39 : G6P\_c <=> G1P\_c



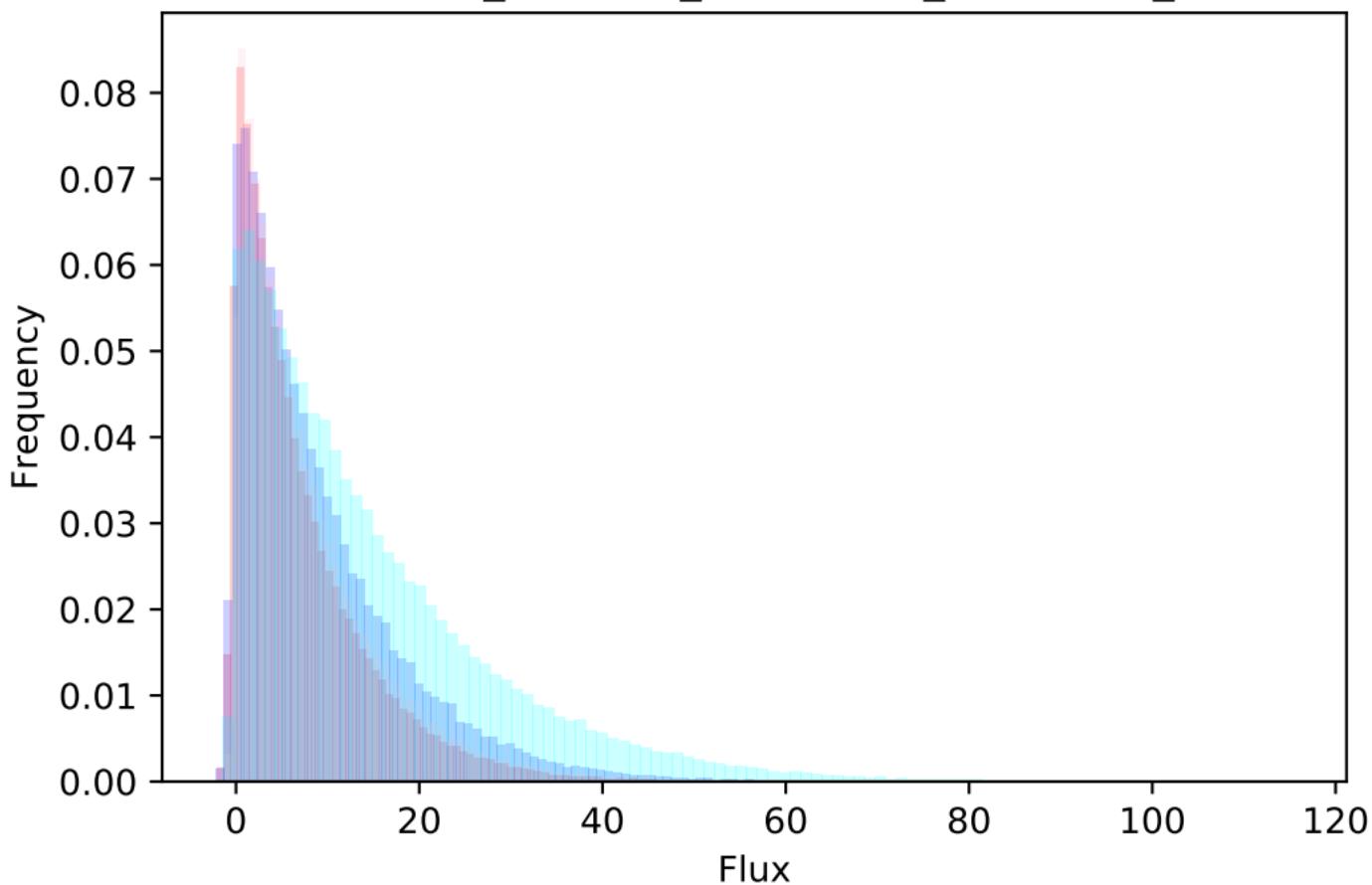


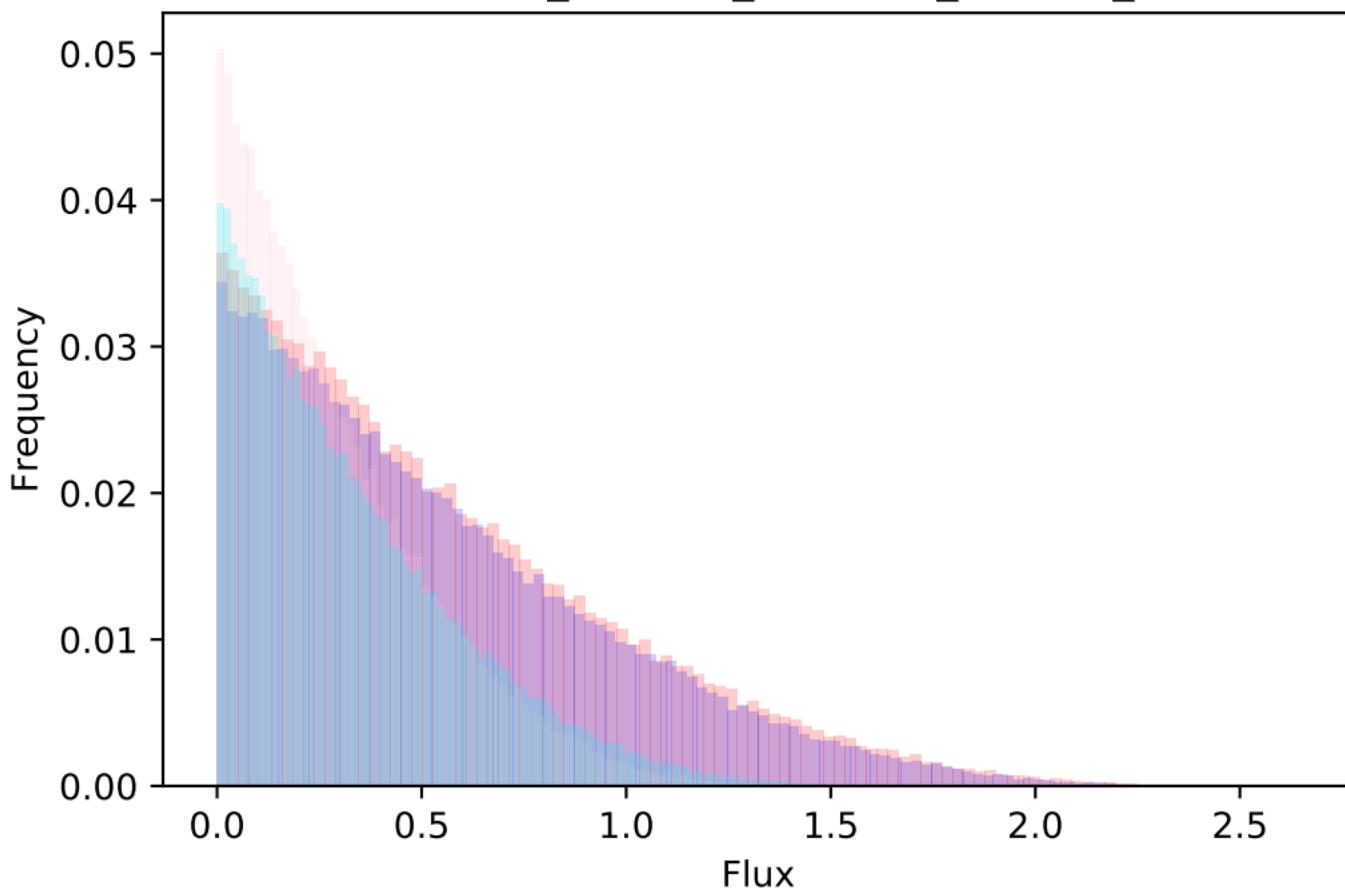
41 : F6P\_c + UDPG\_c --> S6P\_c + UDP\_c

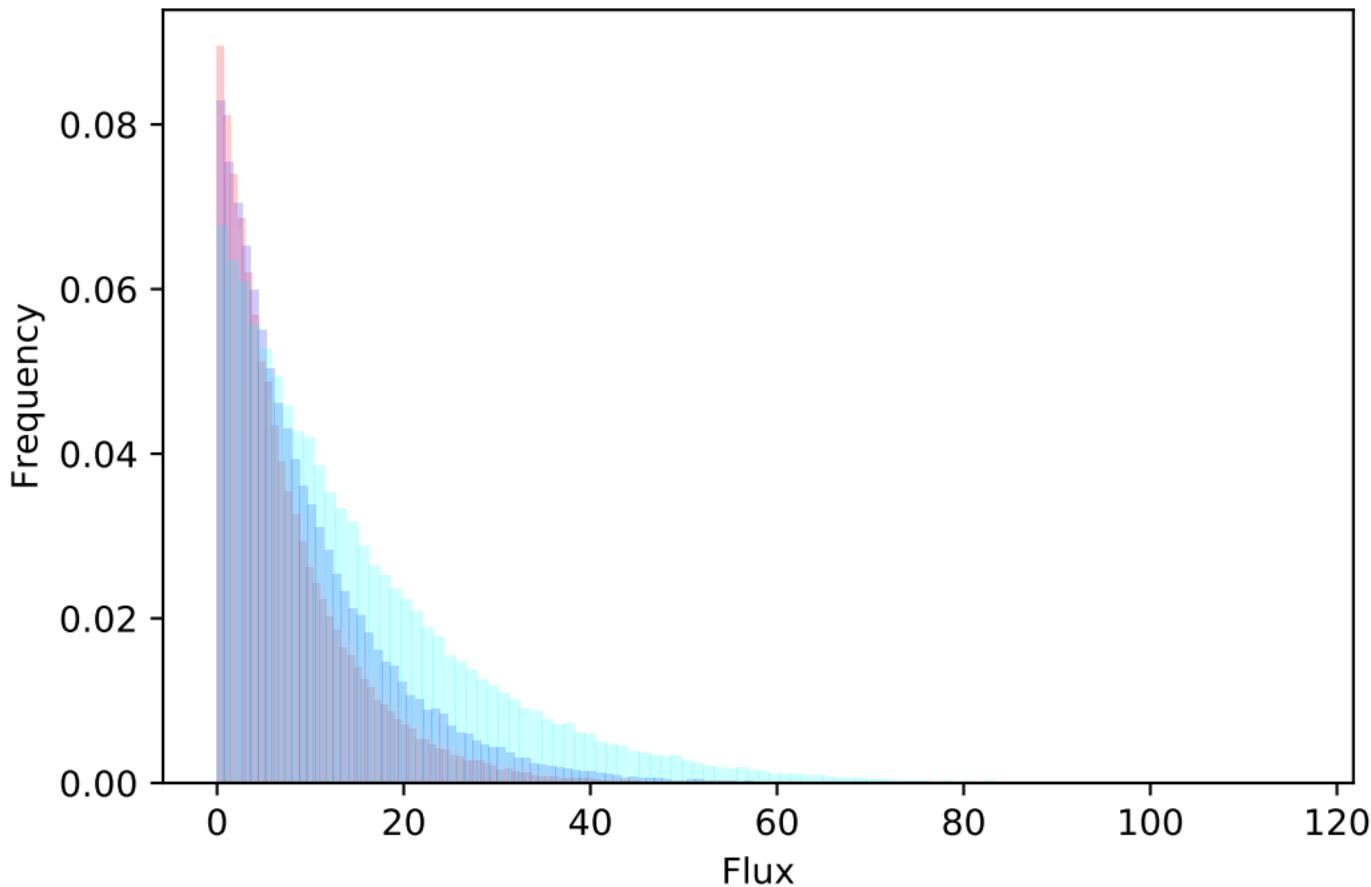
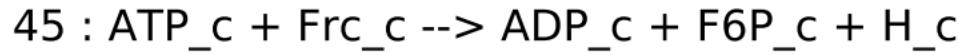


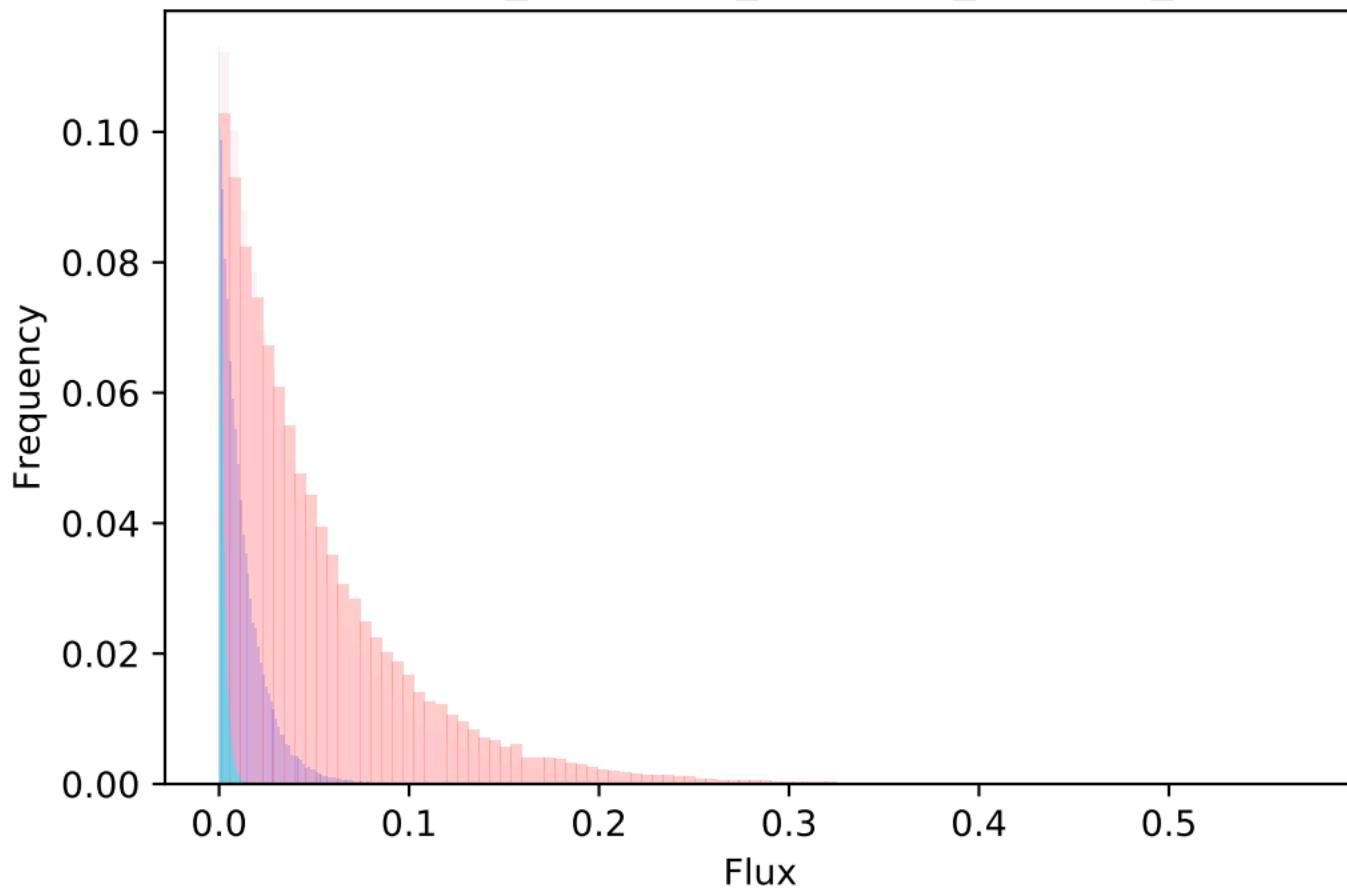


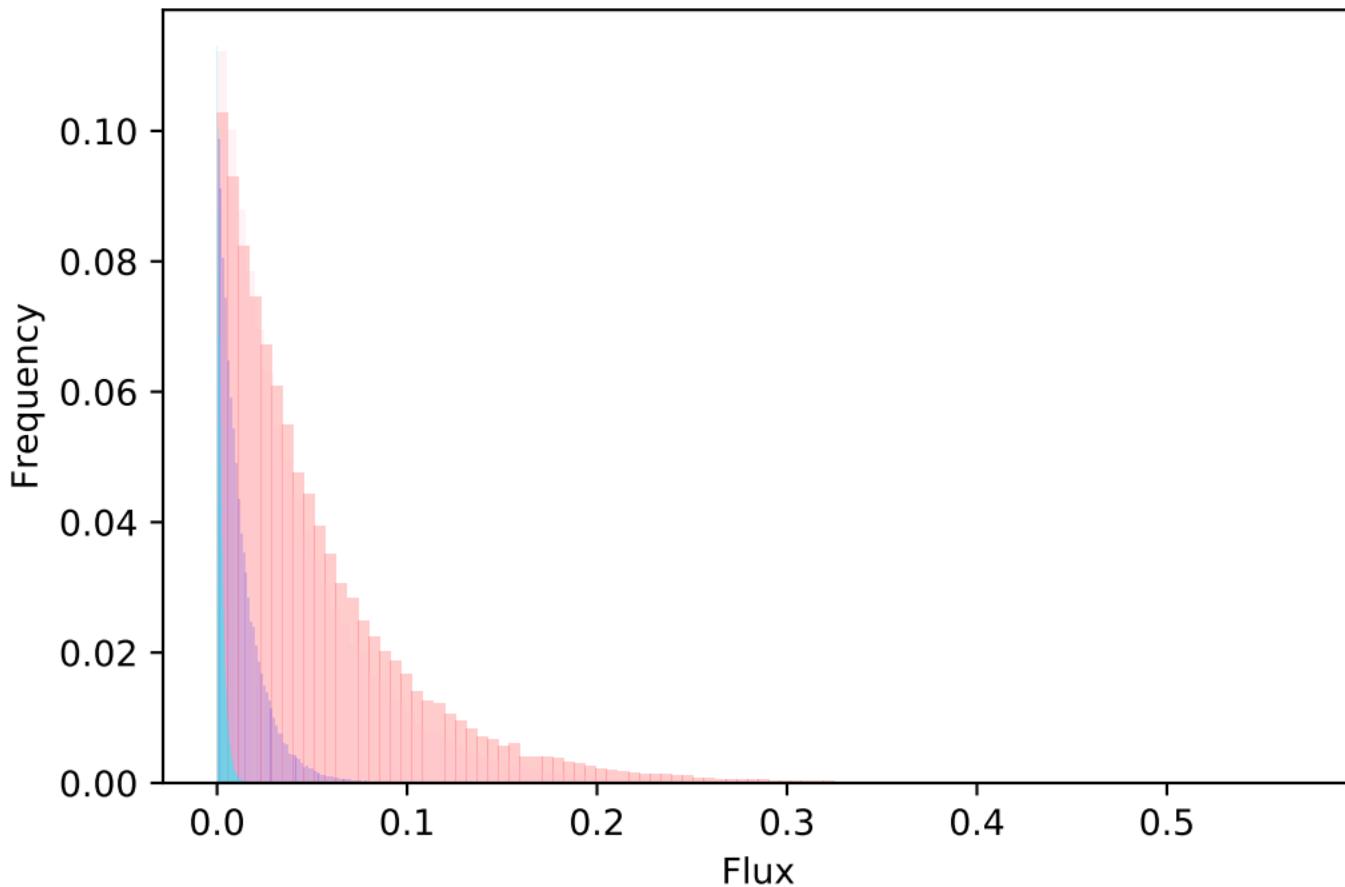
43 : Suc\_c + UDP\_c <=> Frc\_c + UDPG\_c



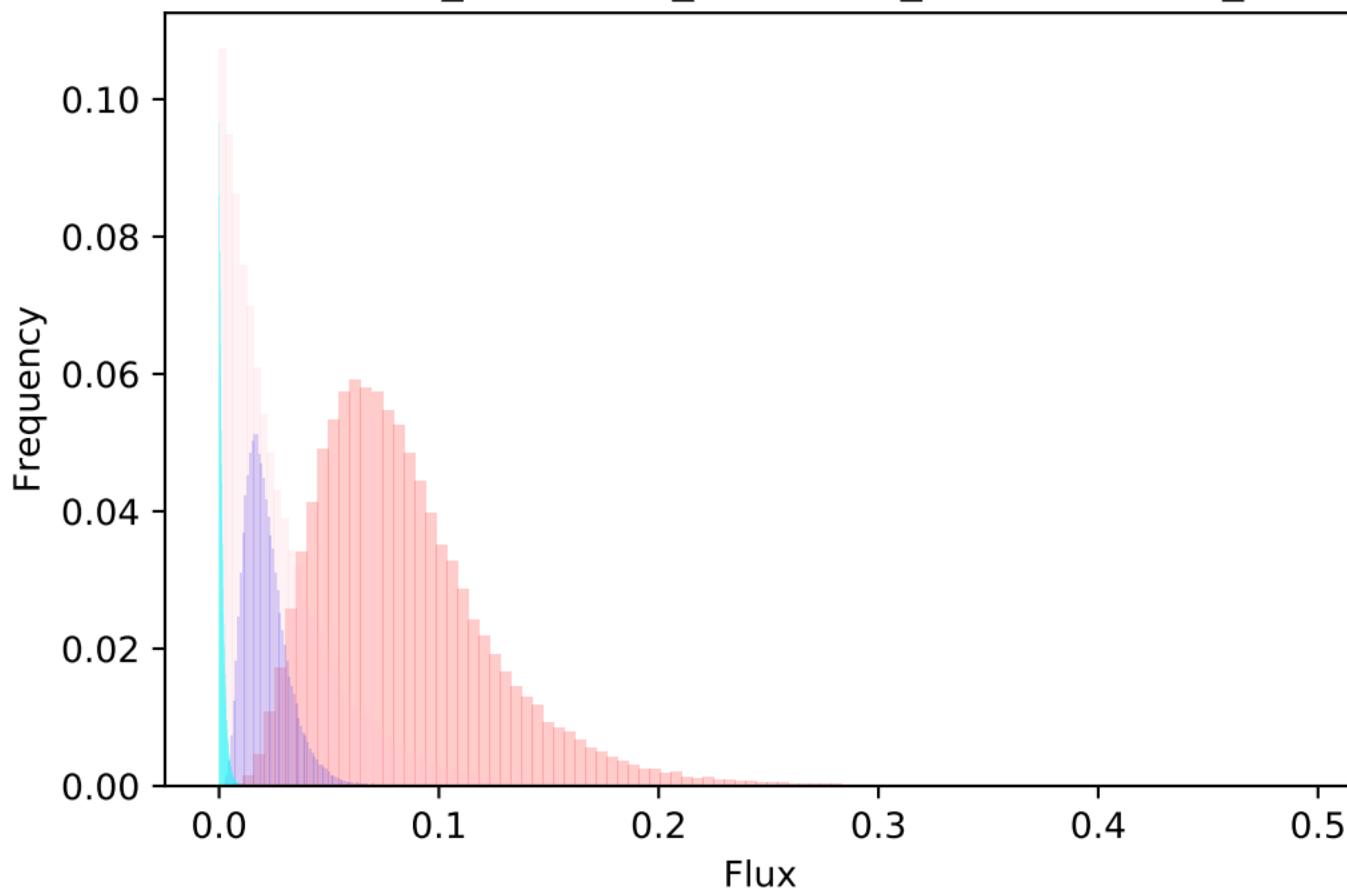




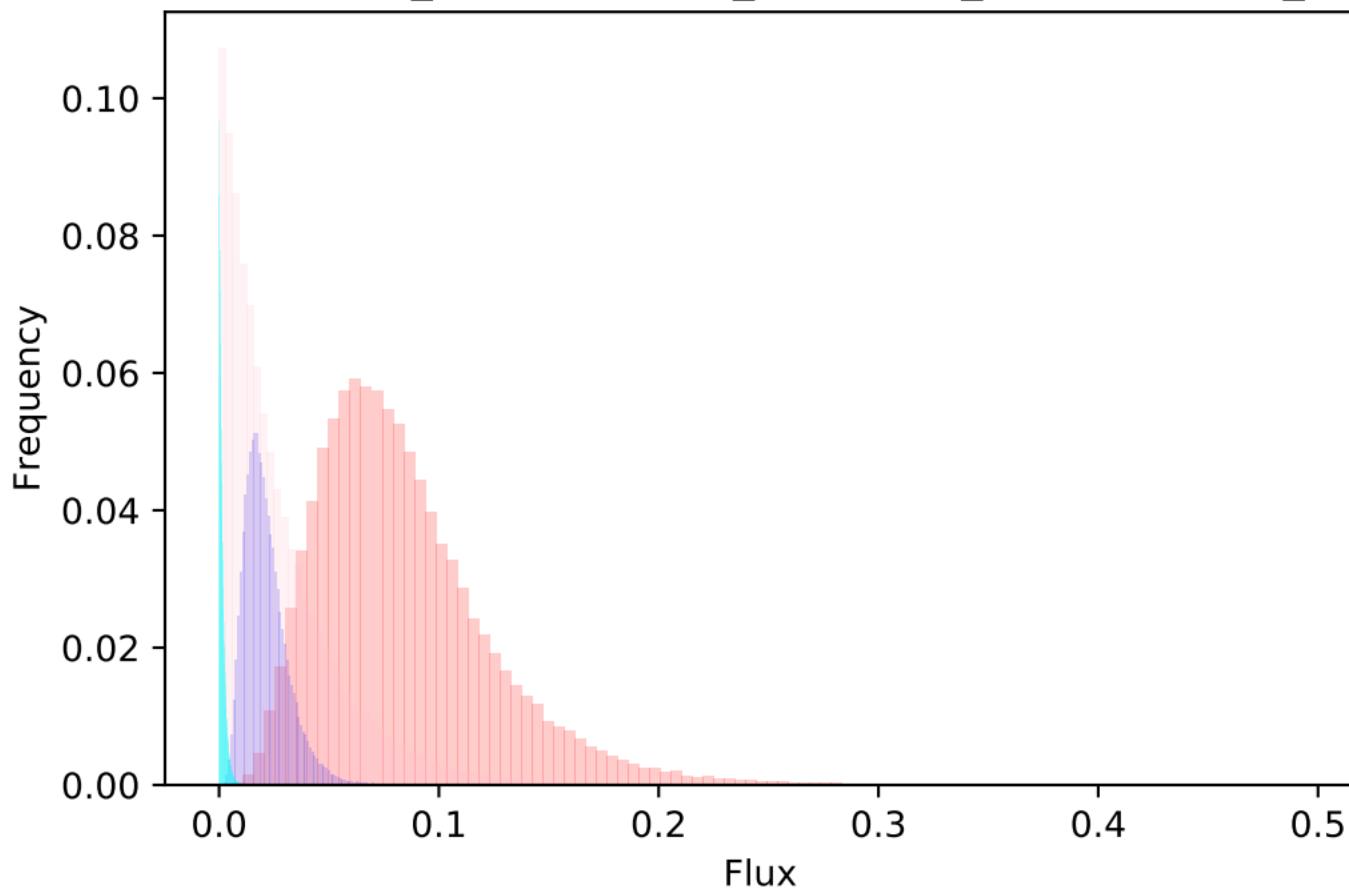




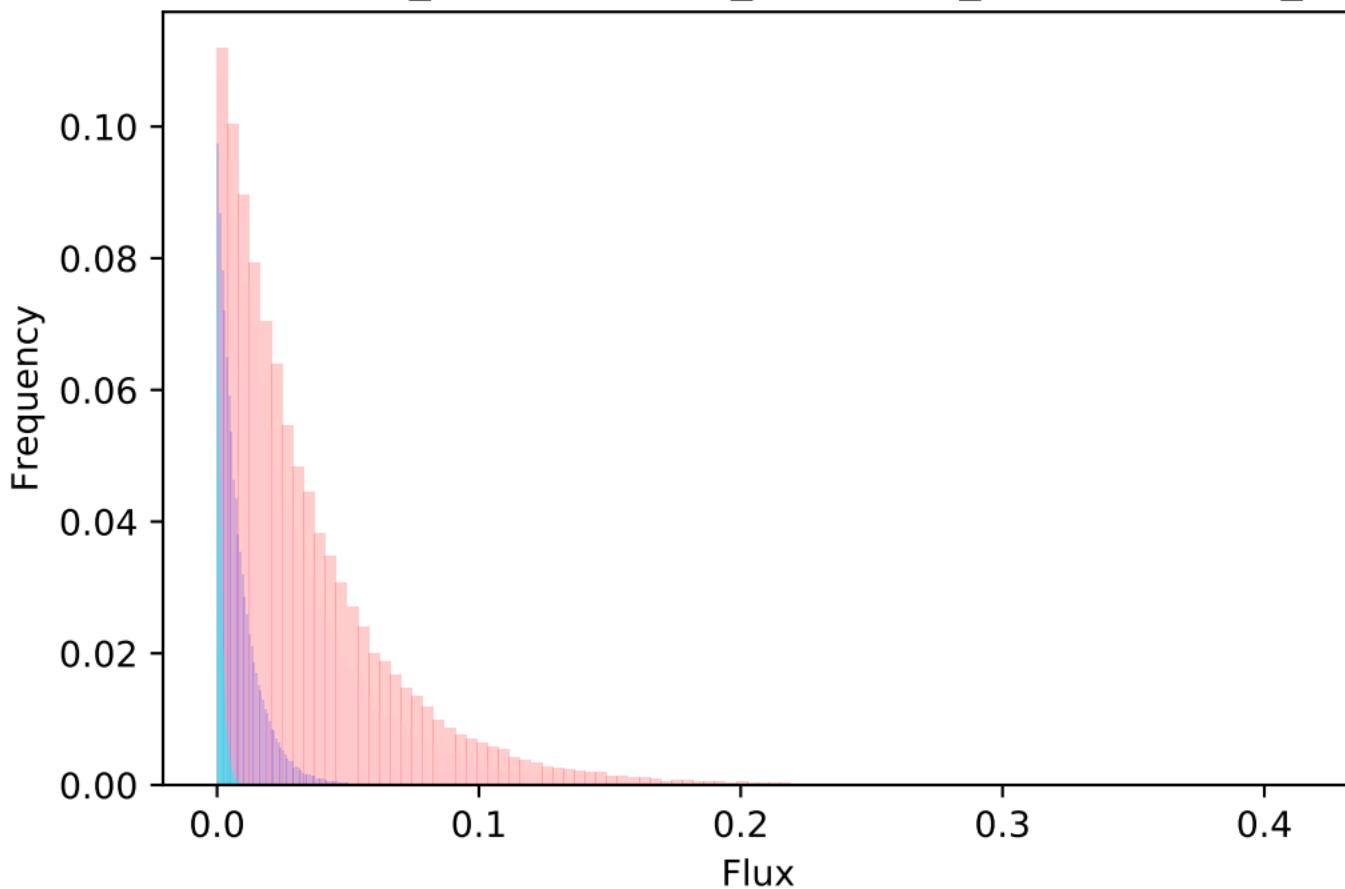
48 : H<sub>2</sub>O\_c + UDPG\_c --> UDP\_c + cellulose1\_c



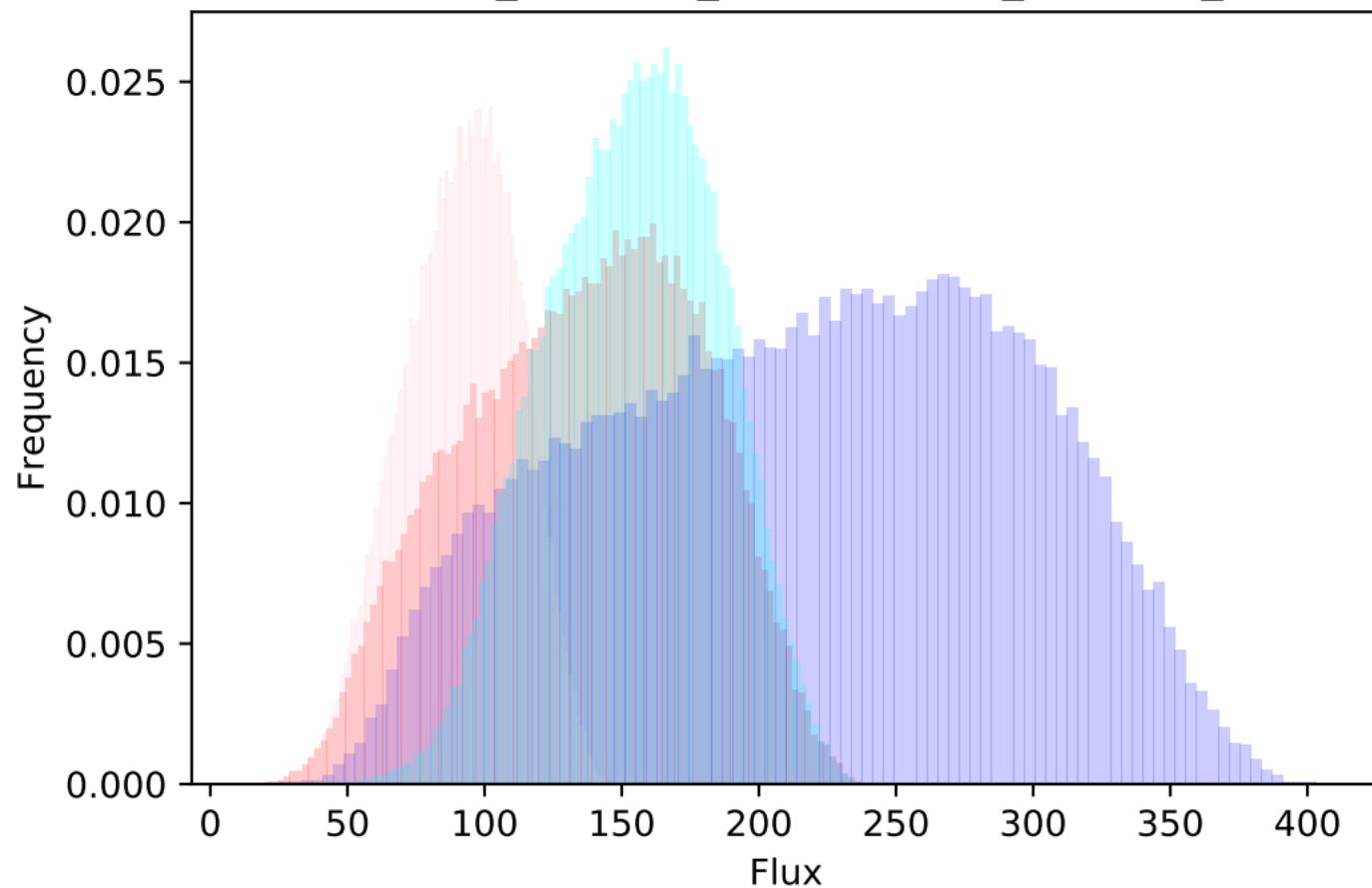
49 : UDPG\_c + cellulose1\_c --> UDP\_c + cellulose2\_c

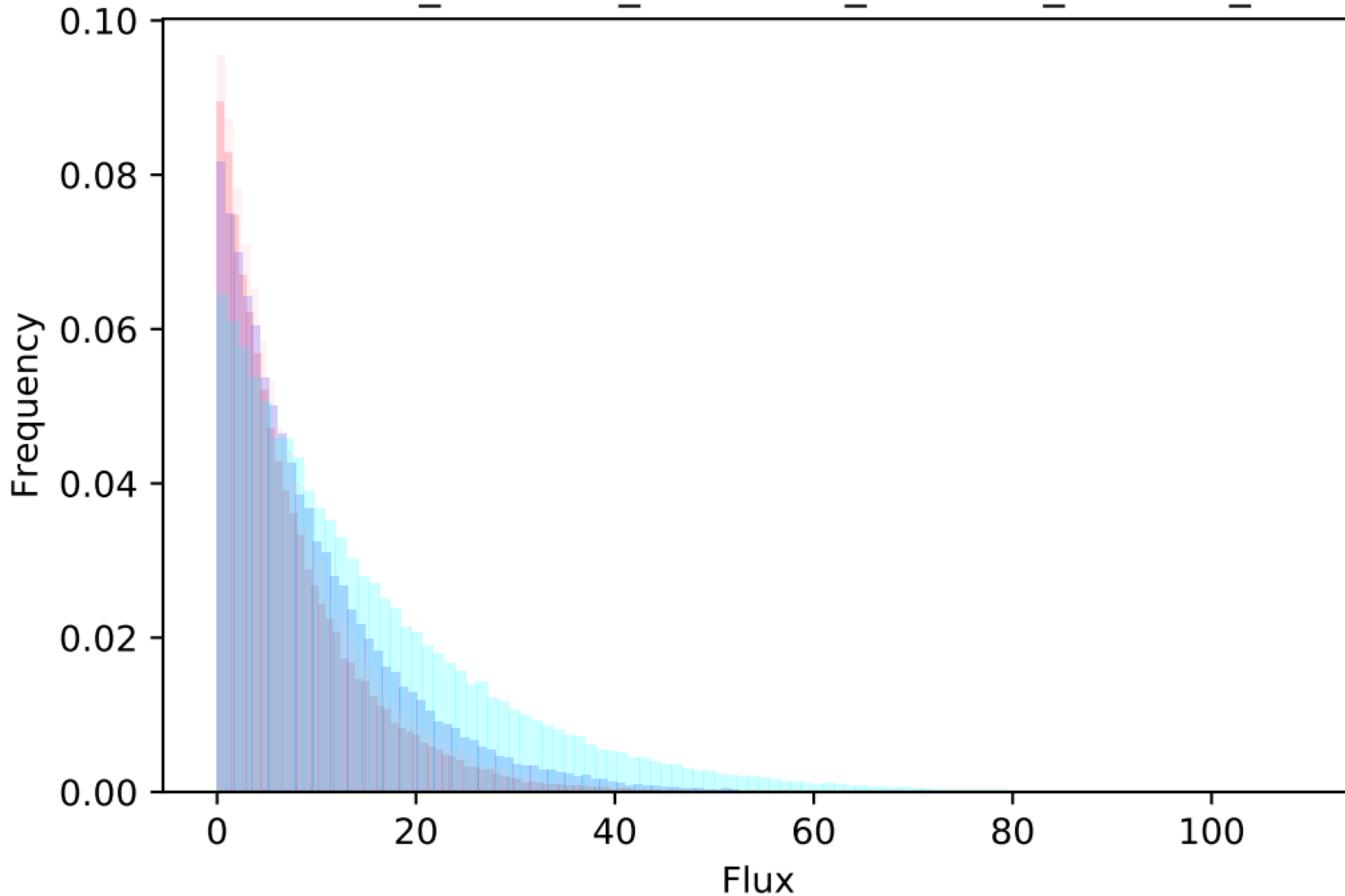


50 : UDPG\_c + cellulose2\_c --> UDP\_c + cellulose3\_c

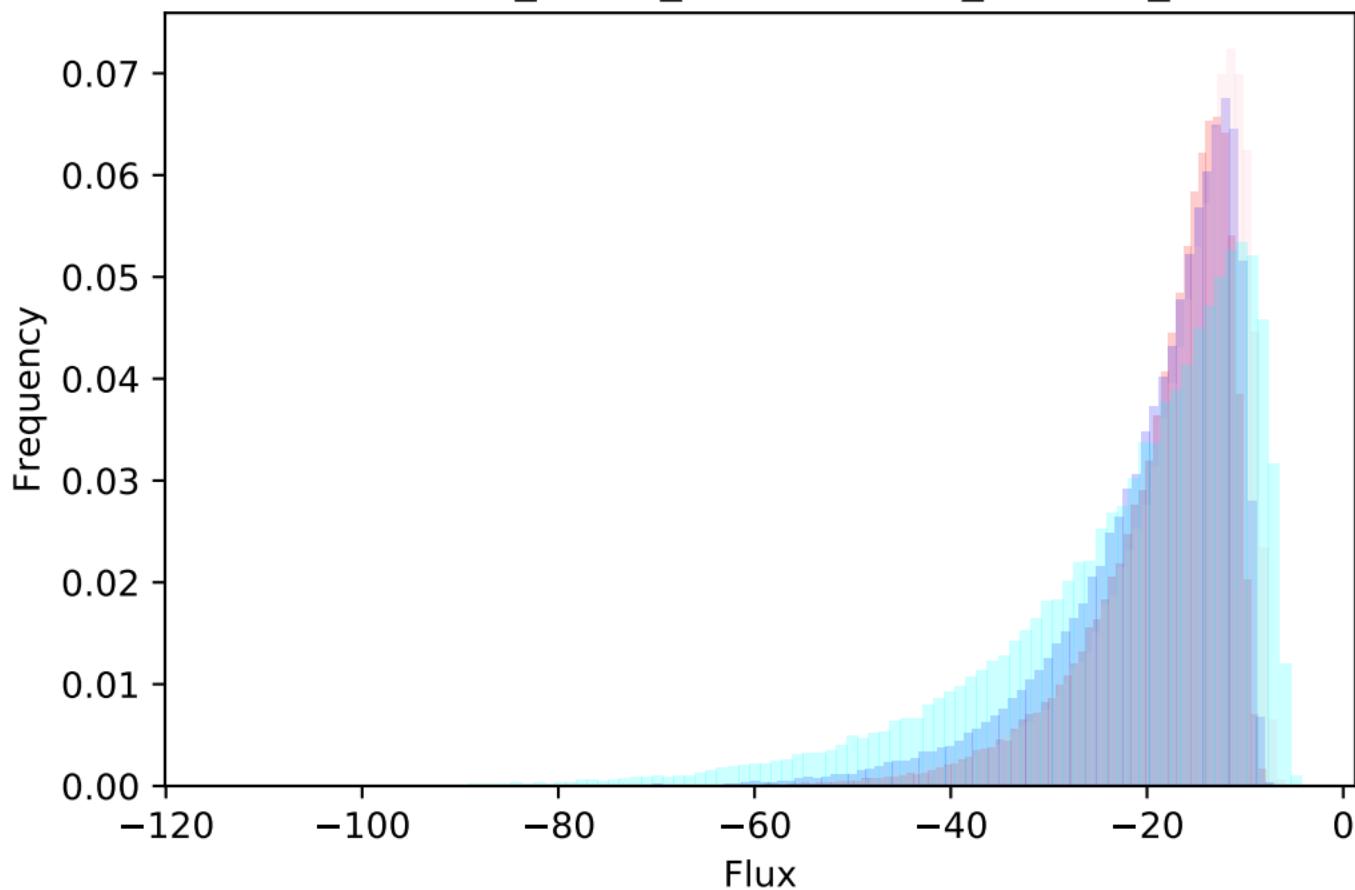


51 : Mal\_c + NAD\_c <=> NADH\_c + OAA\_c

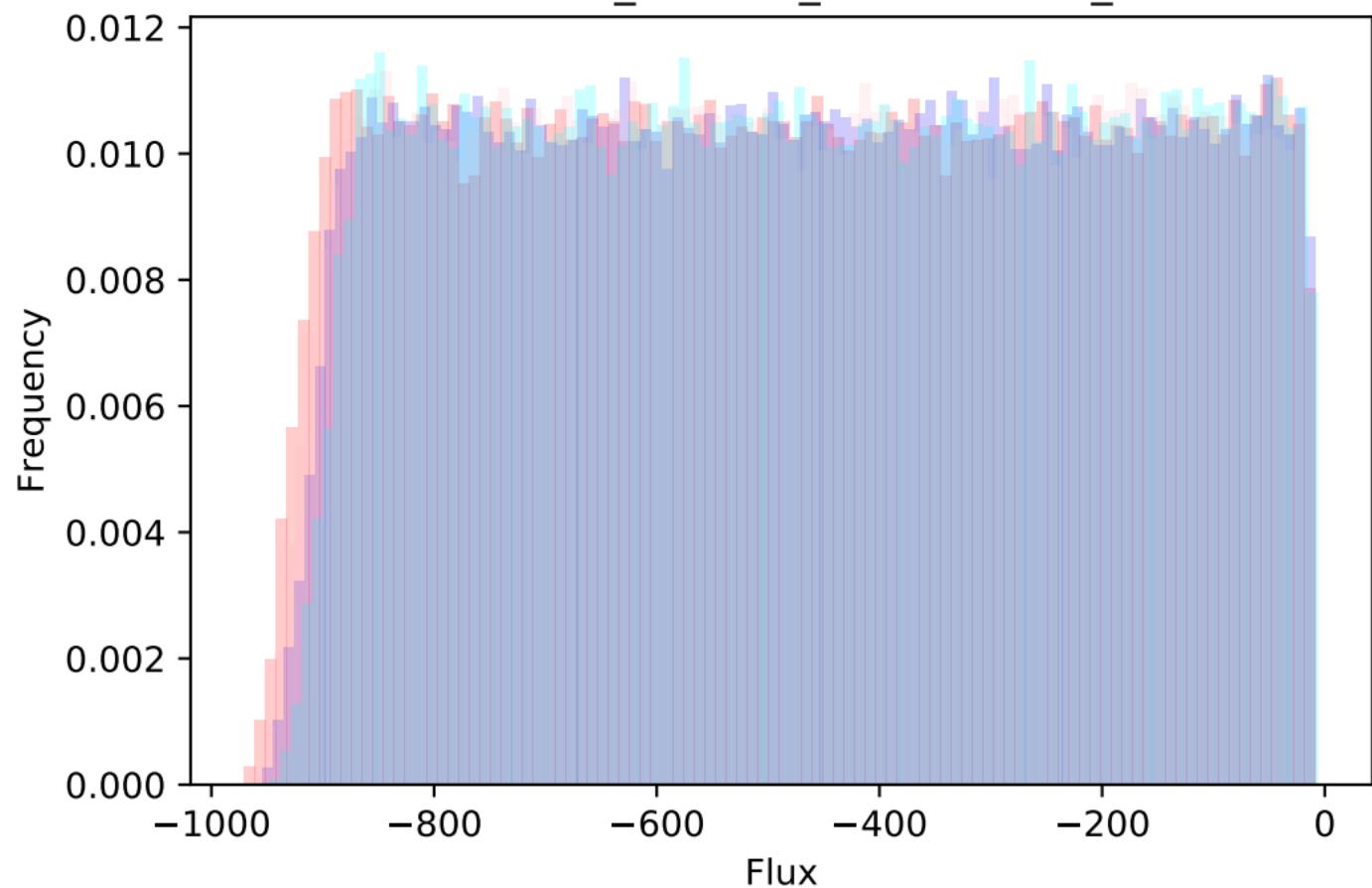




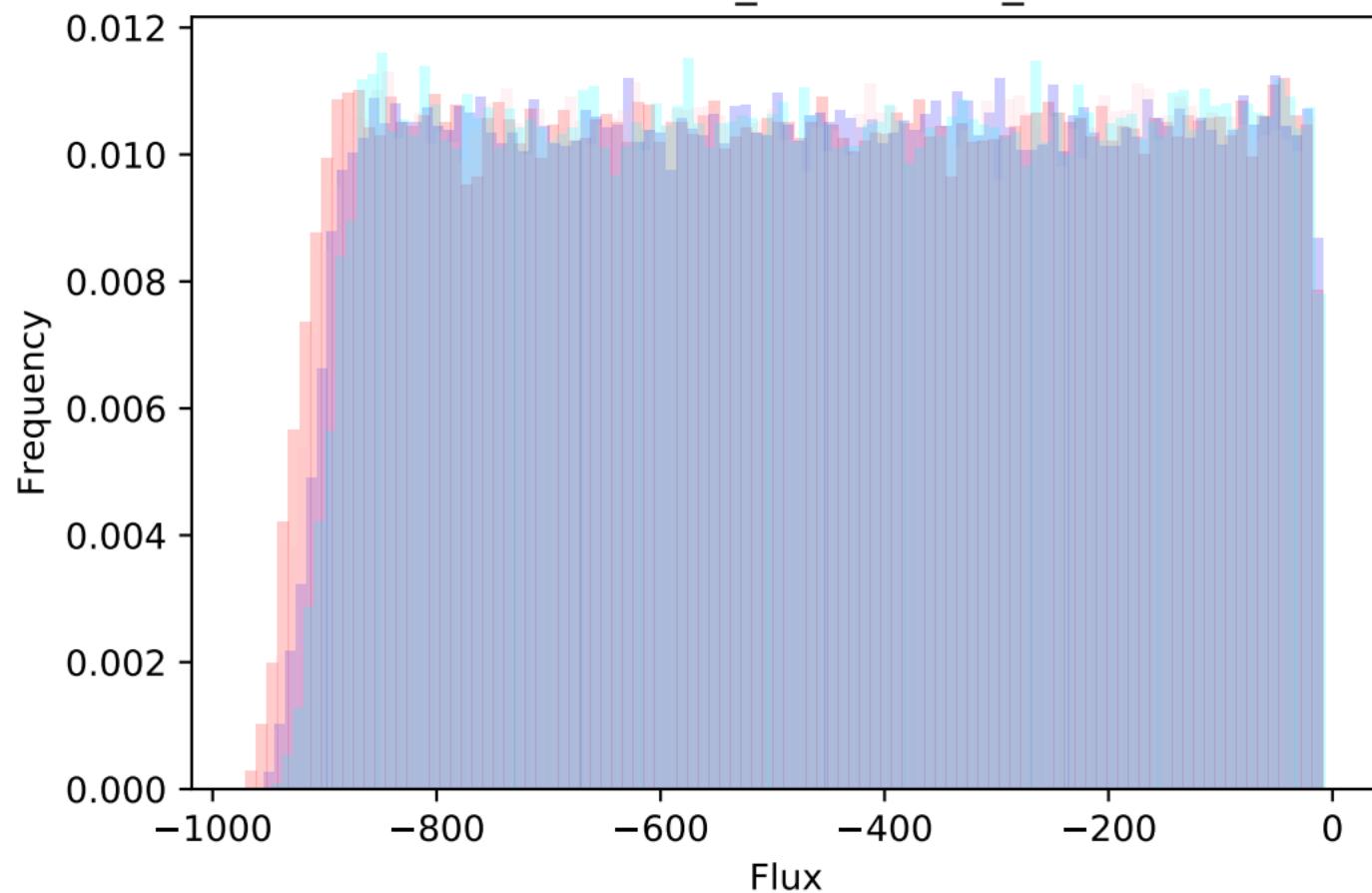
53 : OAA\_c + Pi\_c <=> HCO3\_c + PEP\_c



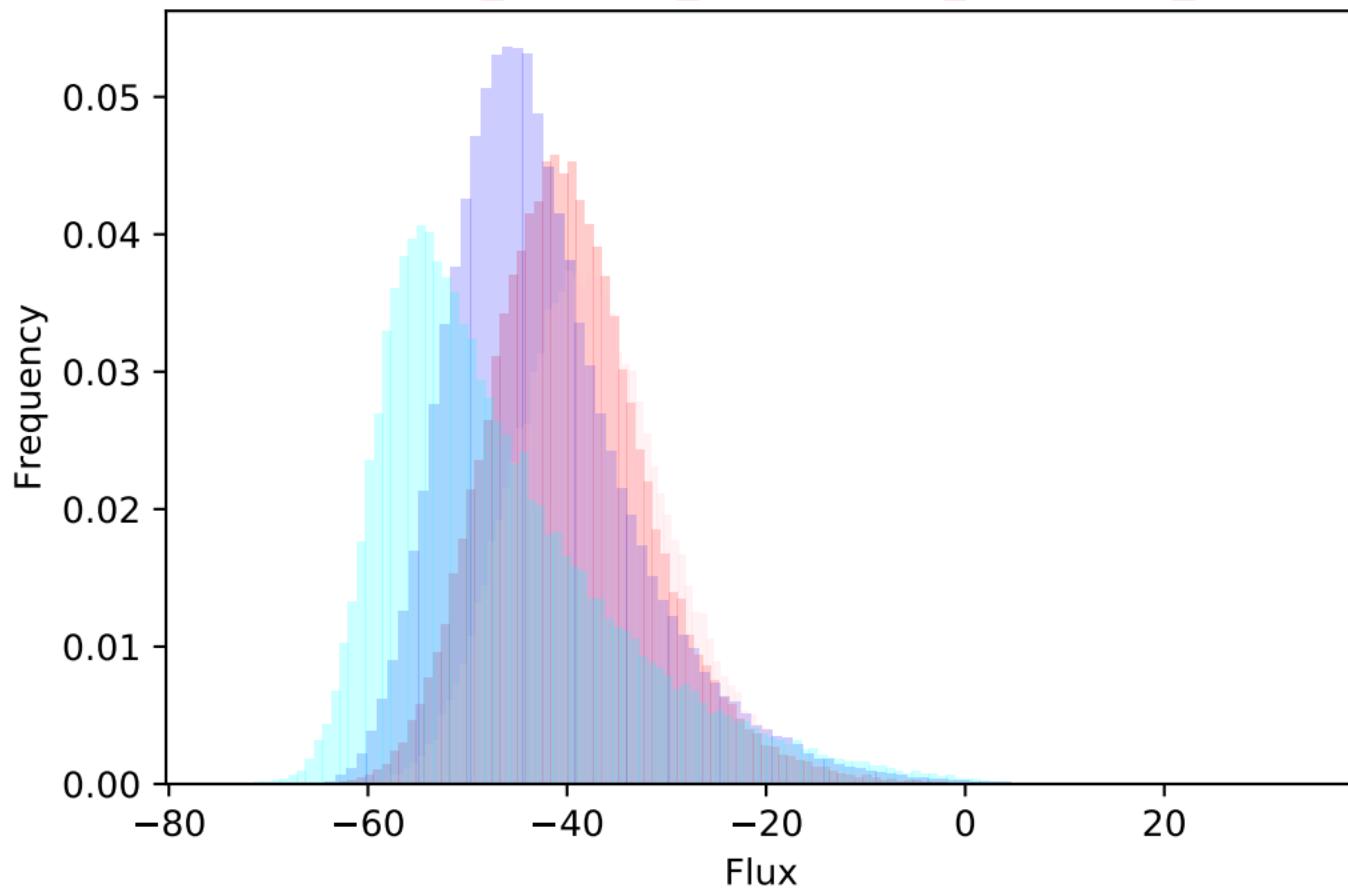
54 : H<sub>2</sub>O\_c + PEP\_c <=> 2PGA\_c

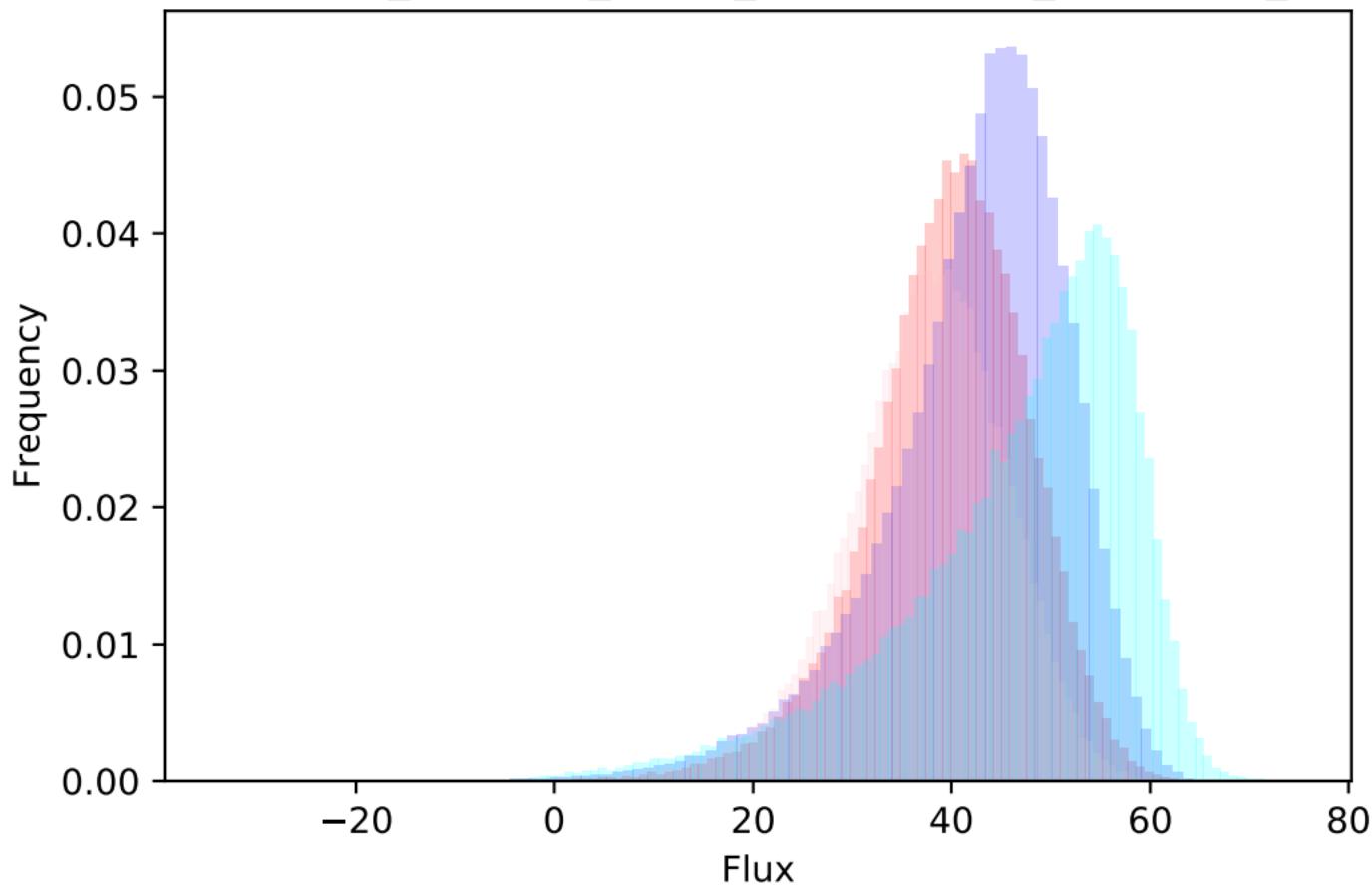


55 : 2PGA\_c <=> PGA\_c

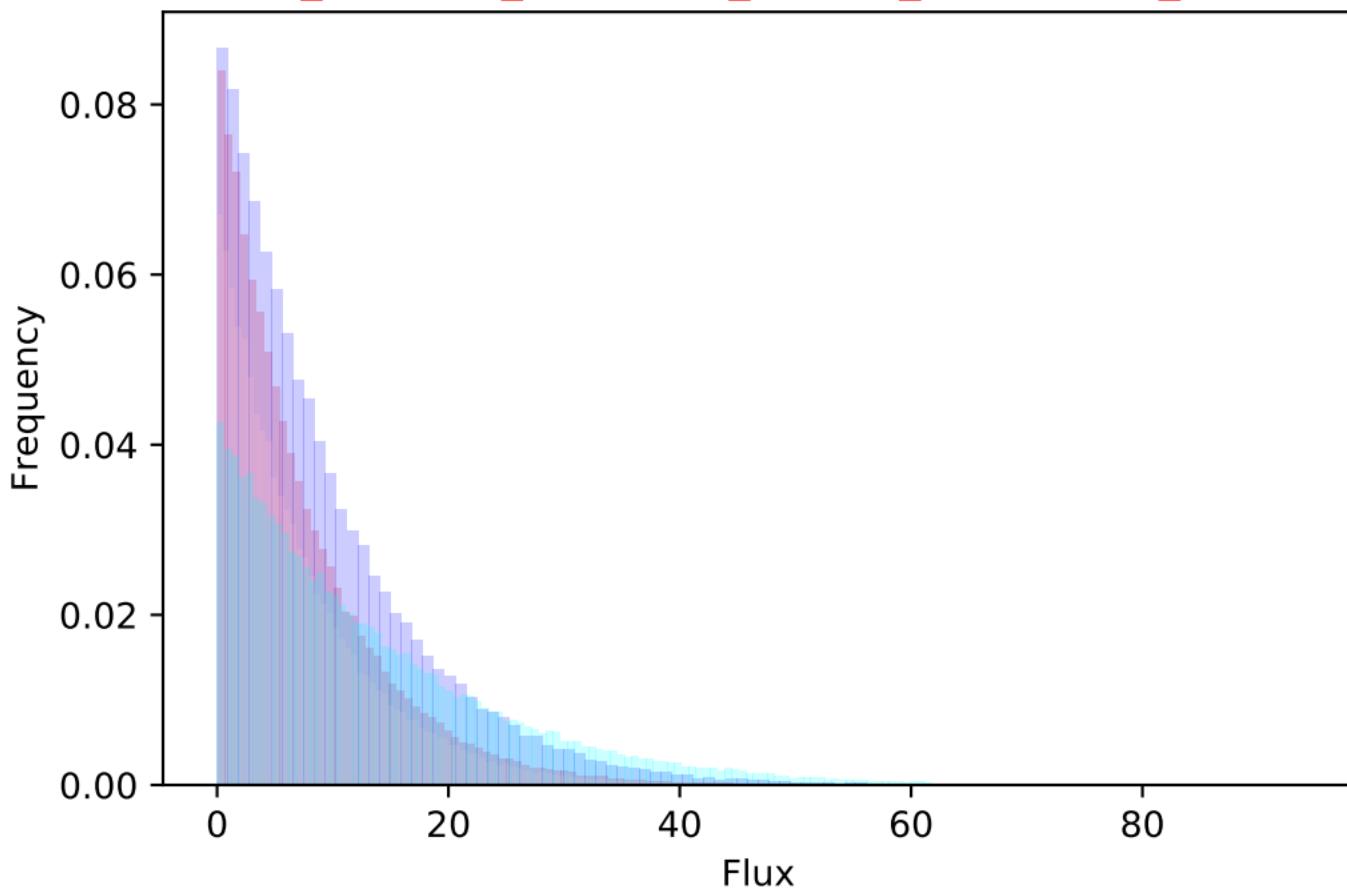


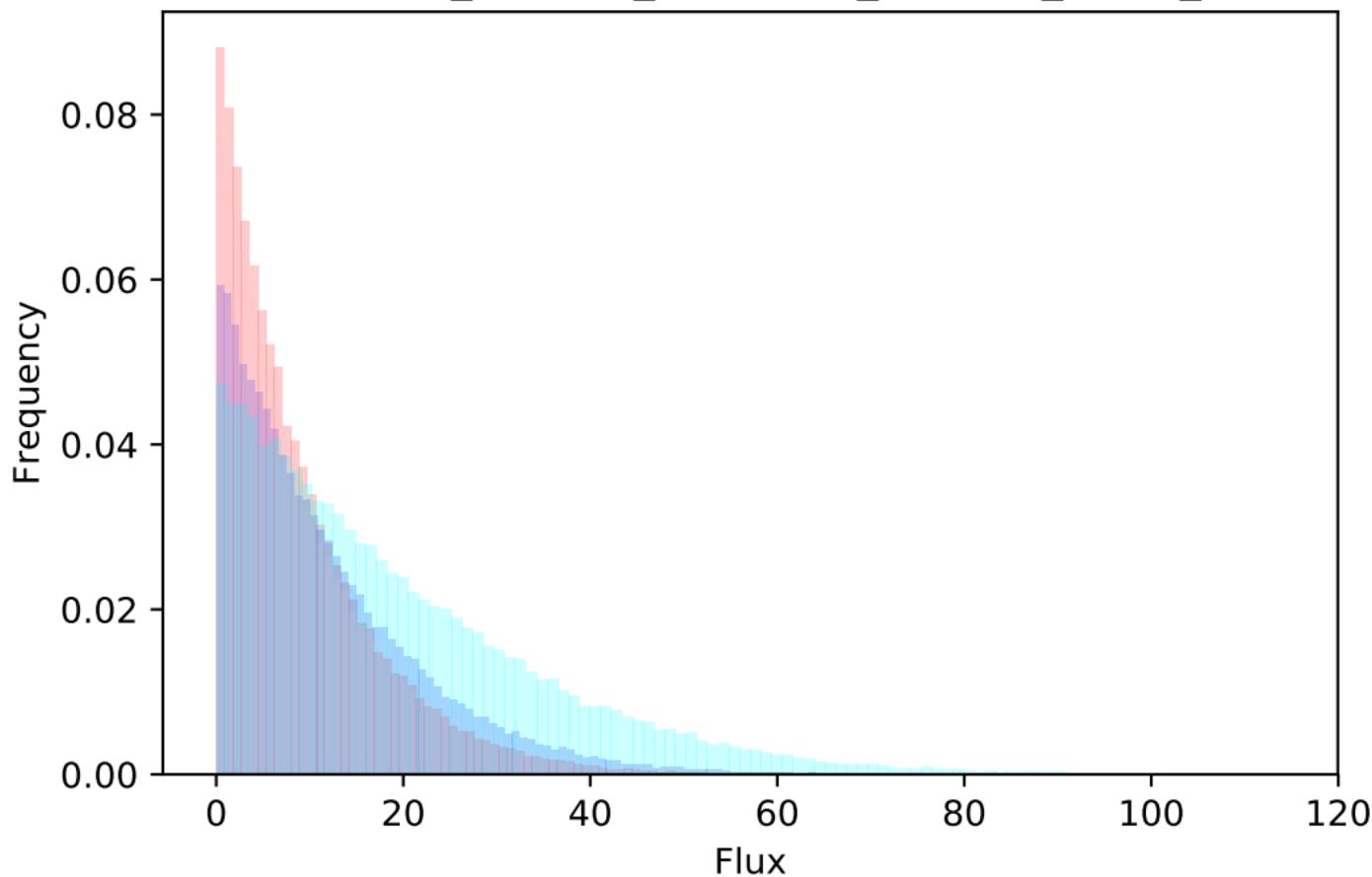
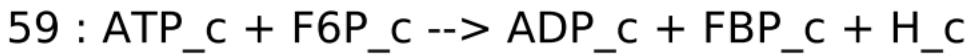
56 : ATP\_c + PGA\_c <=> ADP\_c + DPGA\_c

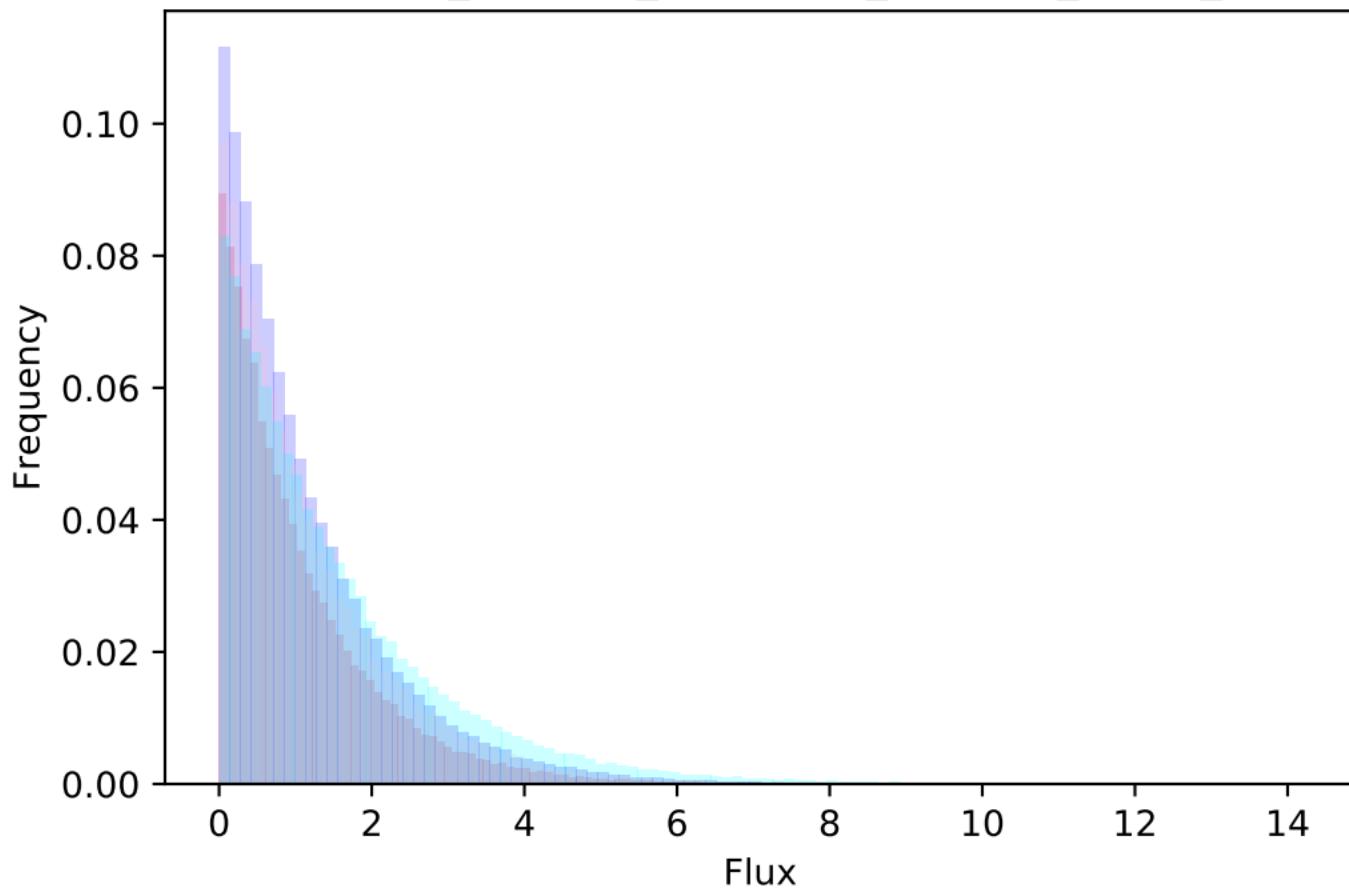
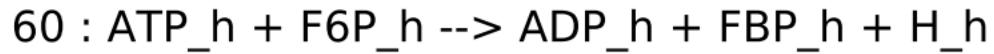


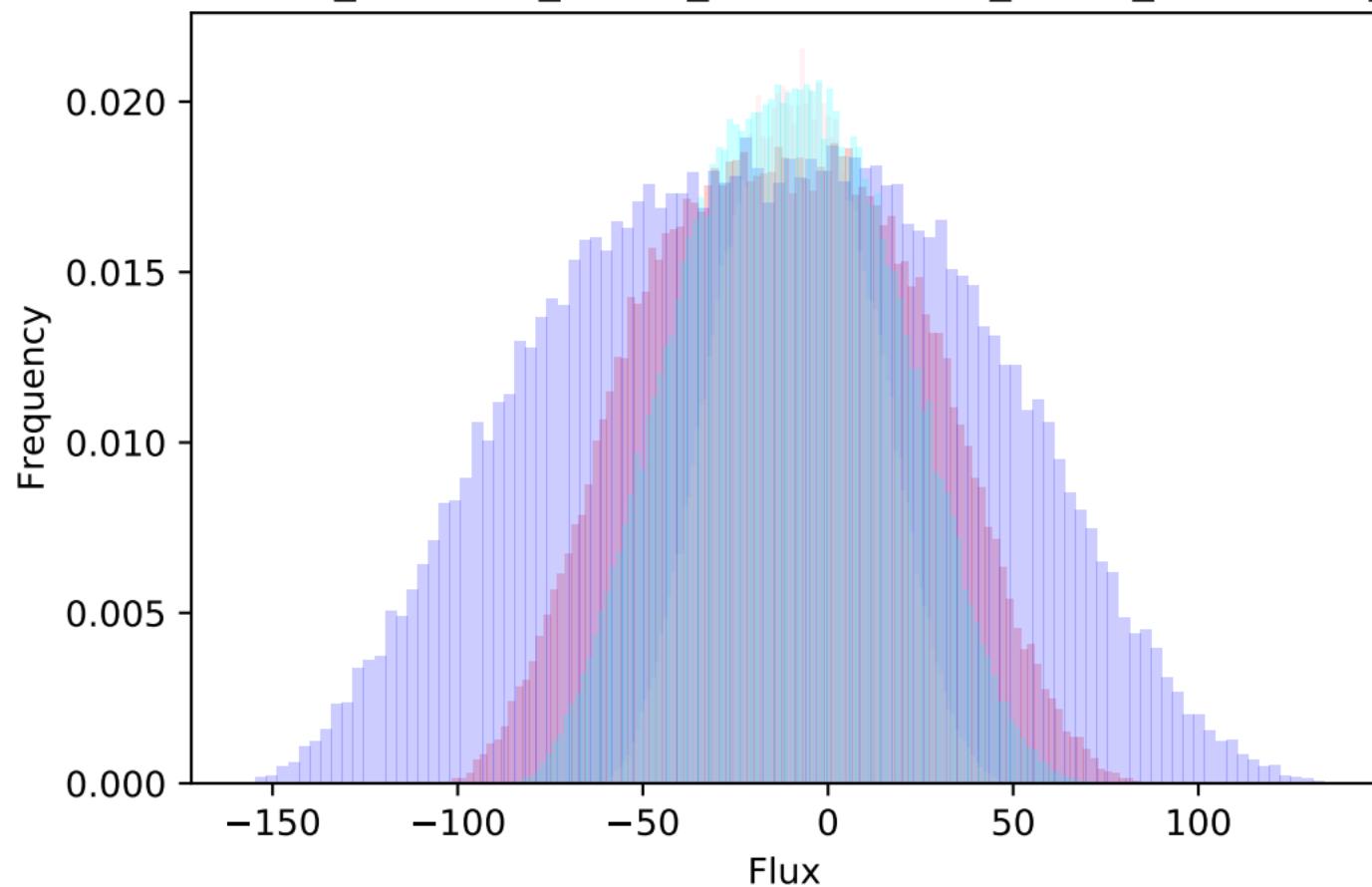
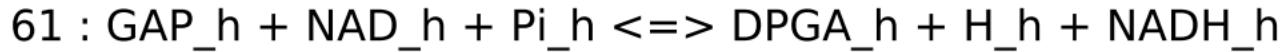


58 : GAP\_c + H2O\_c + NADP\_c --> H\_c + NADPH\_c + PGA\_c

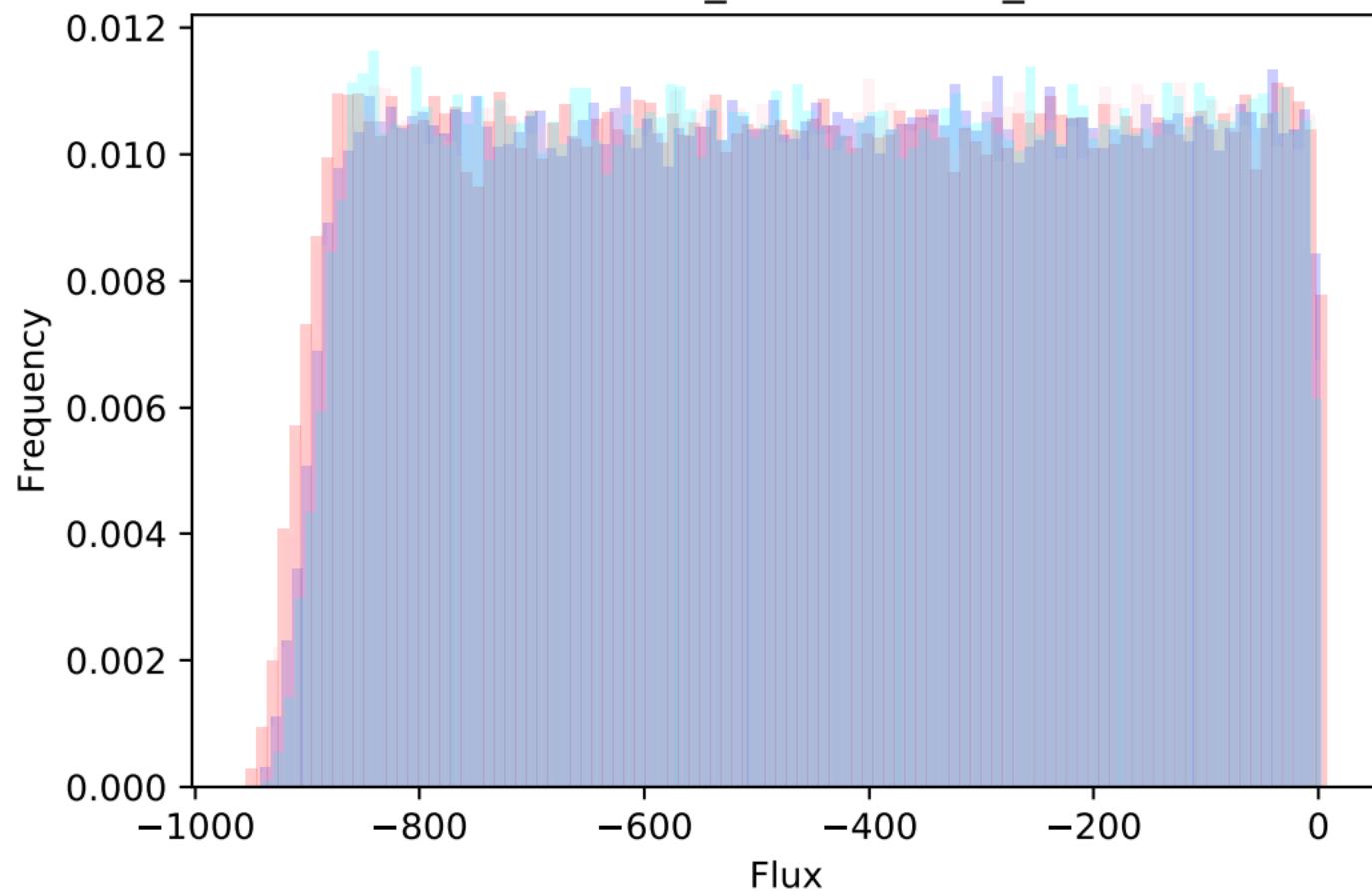




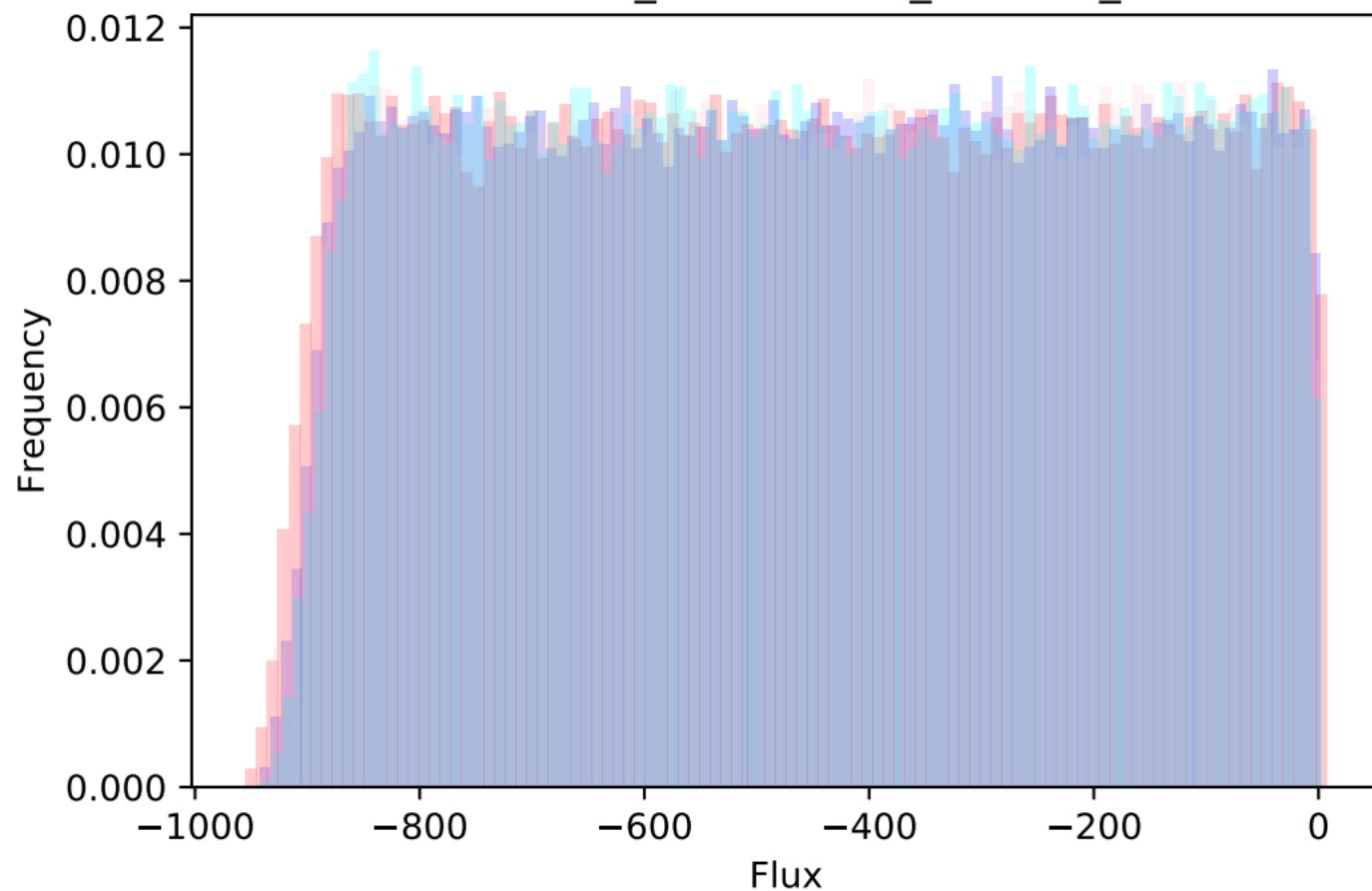


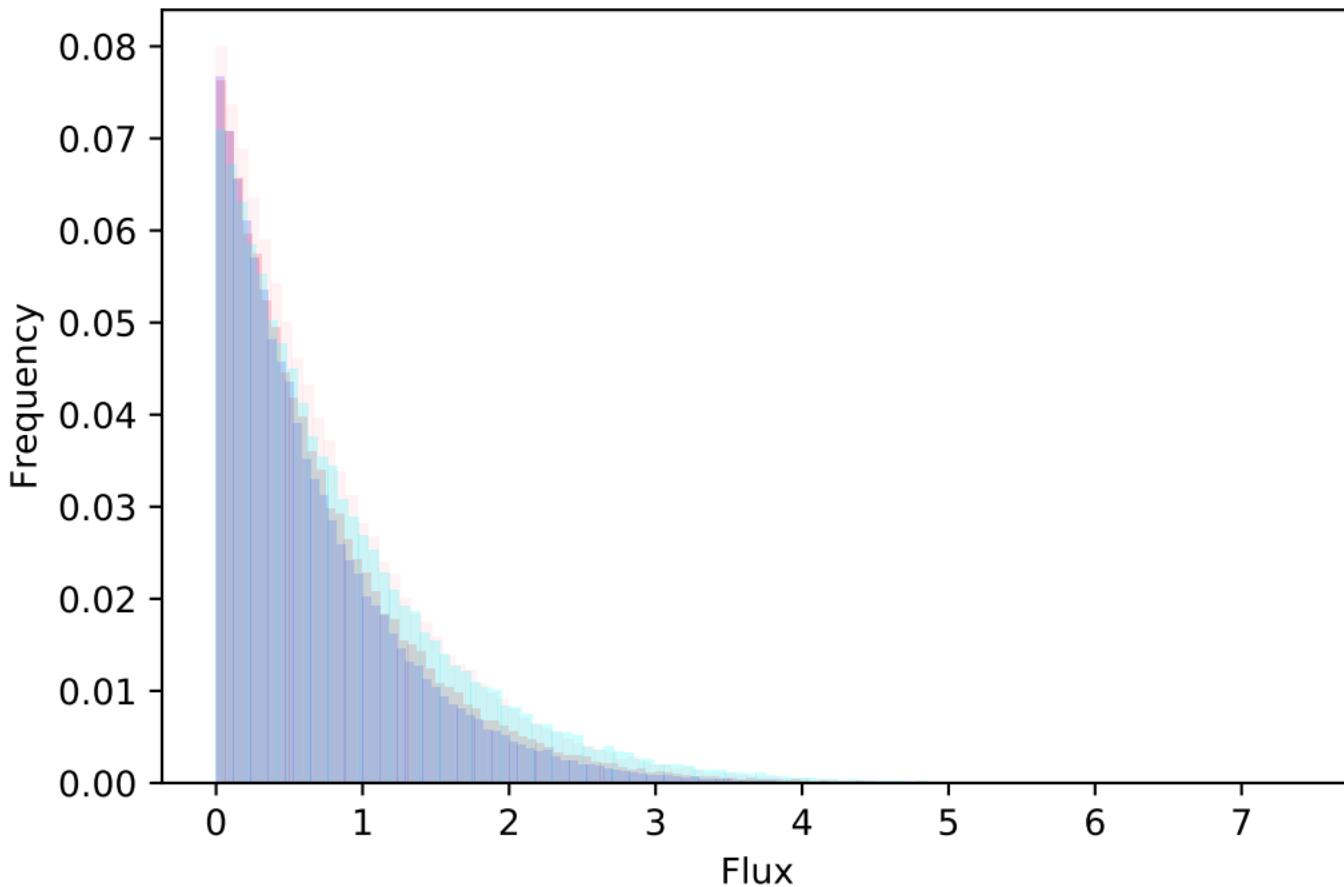


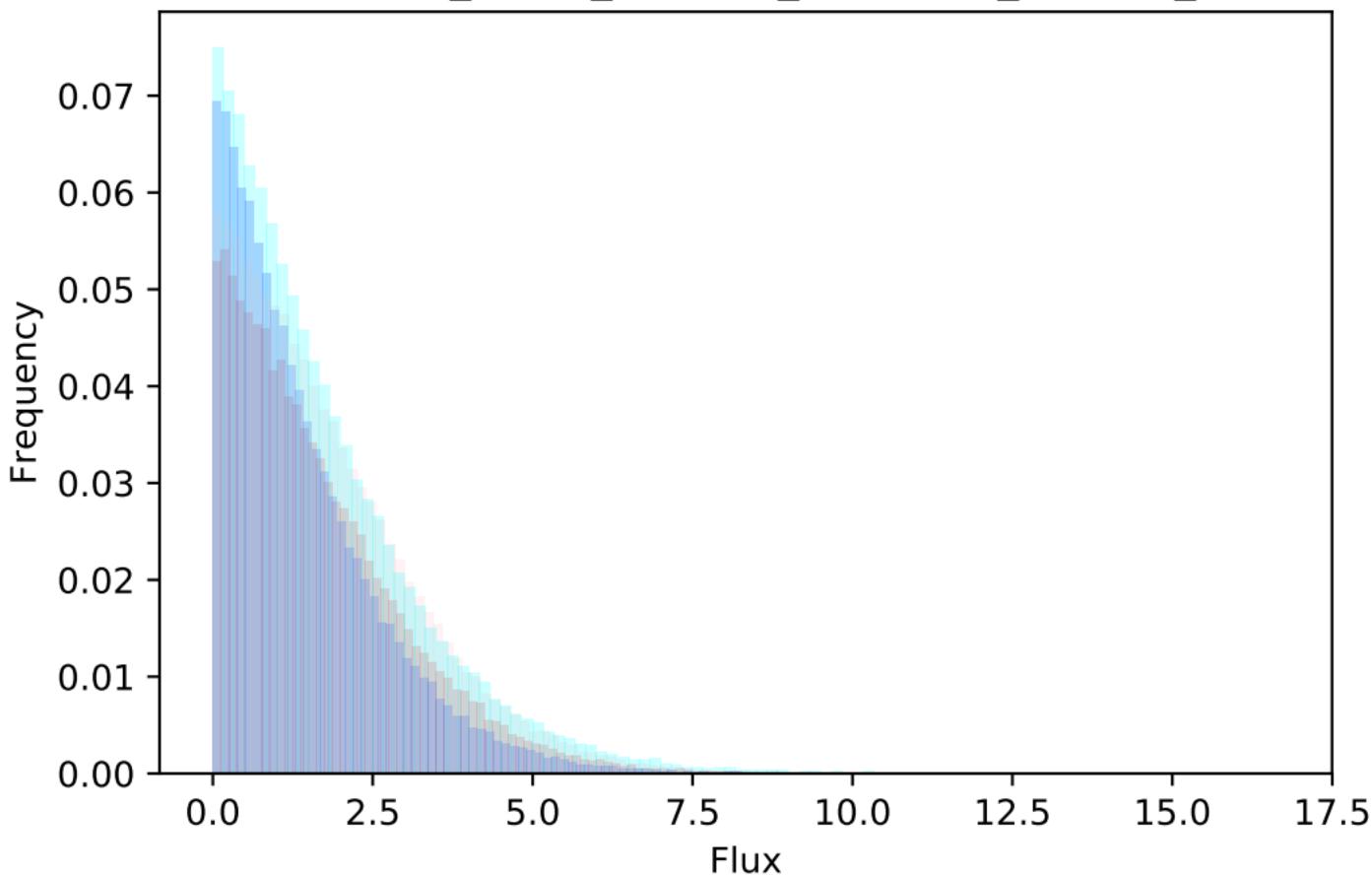
62 : PGA\_h <=> 2PGA\_h



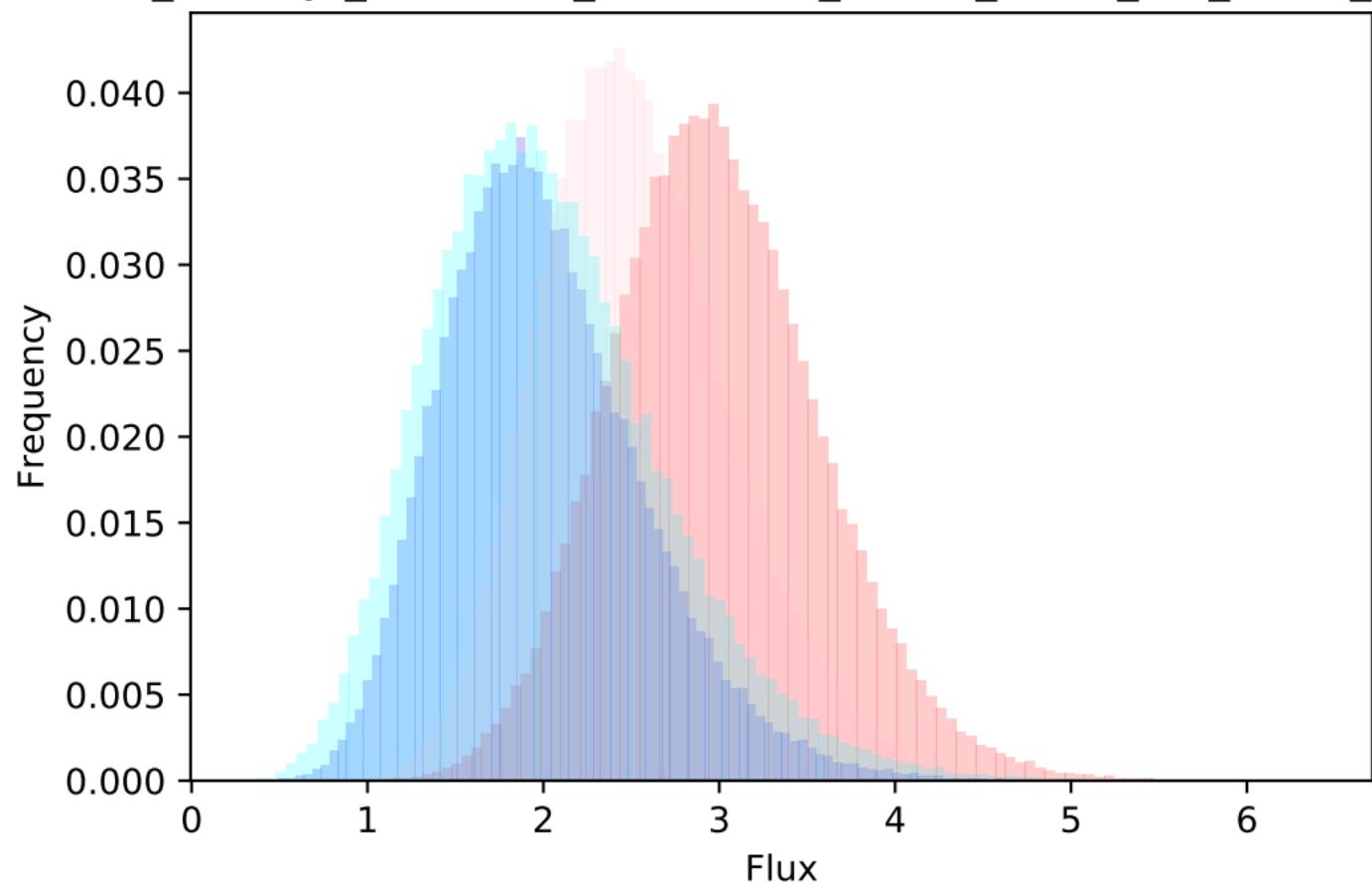
63 : 2PGA\_h <=> H2O\_h + PEP\_h



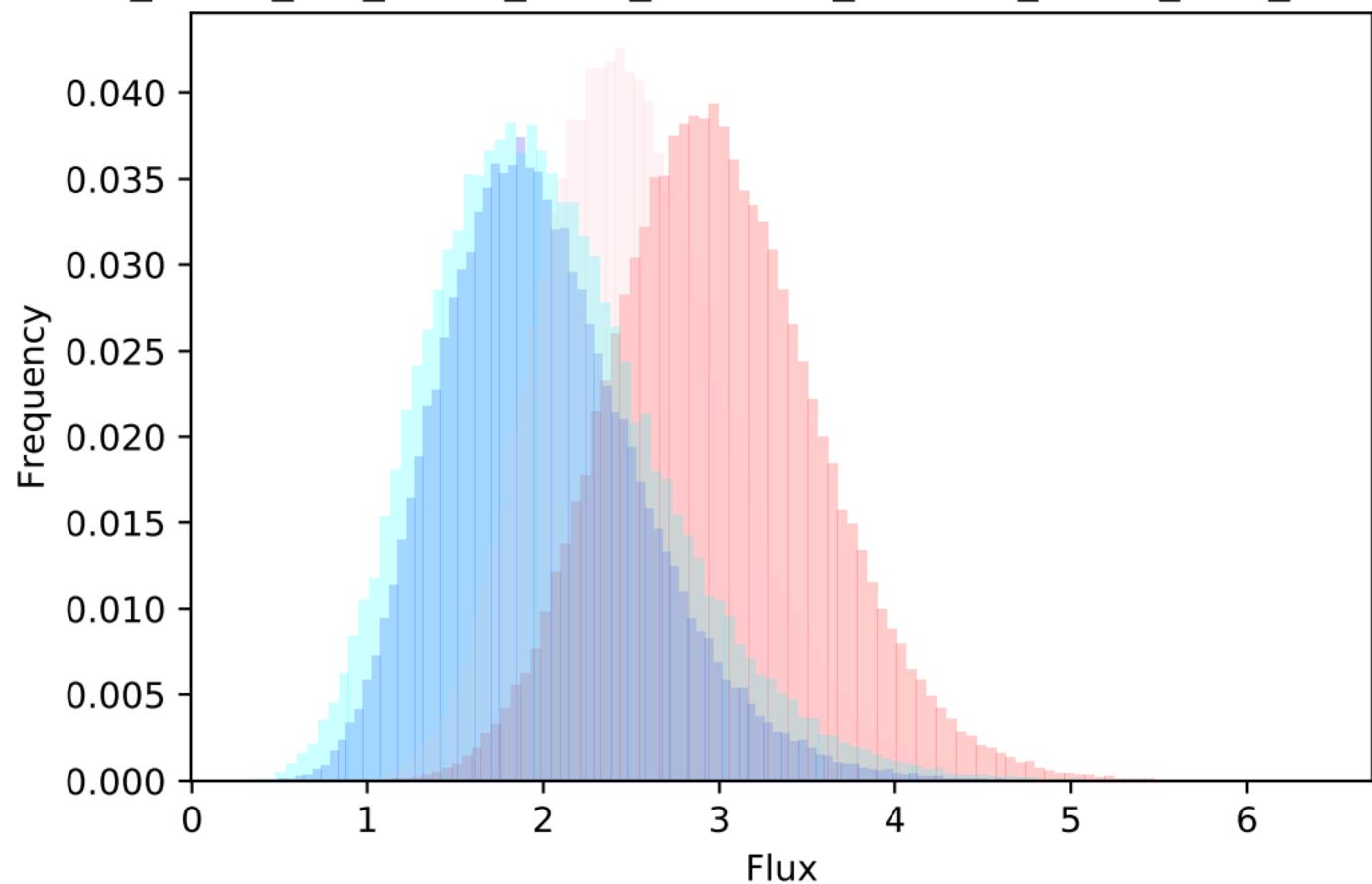




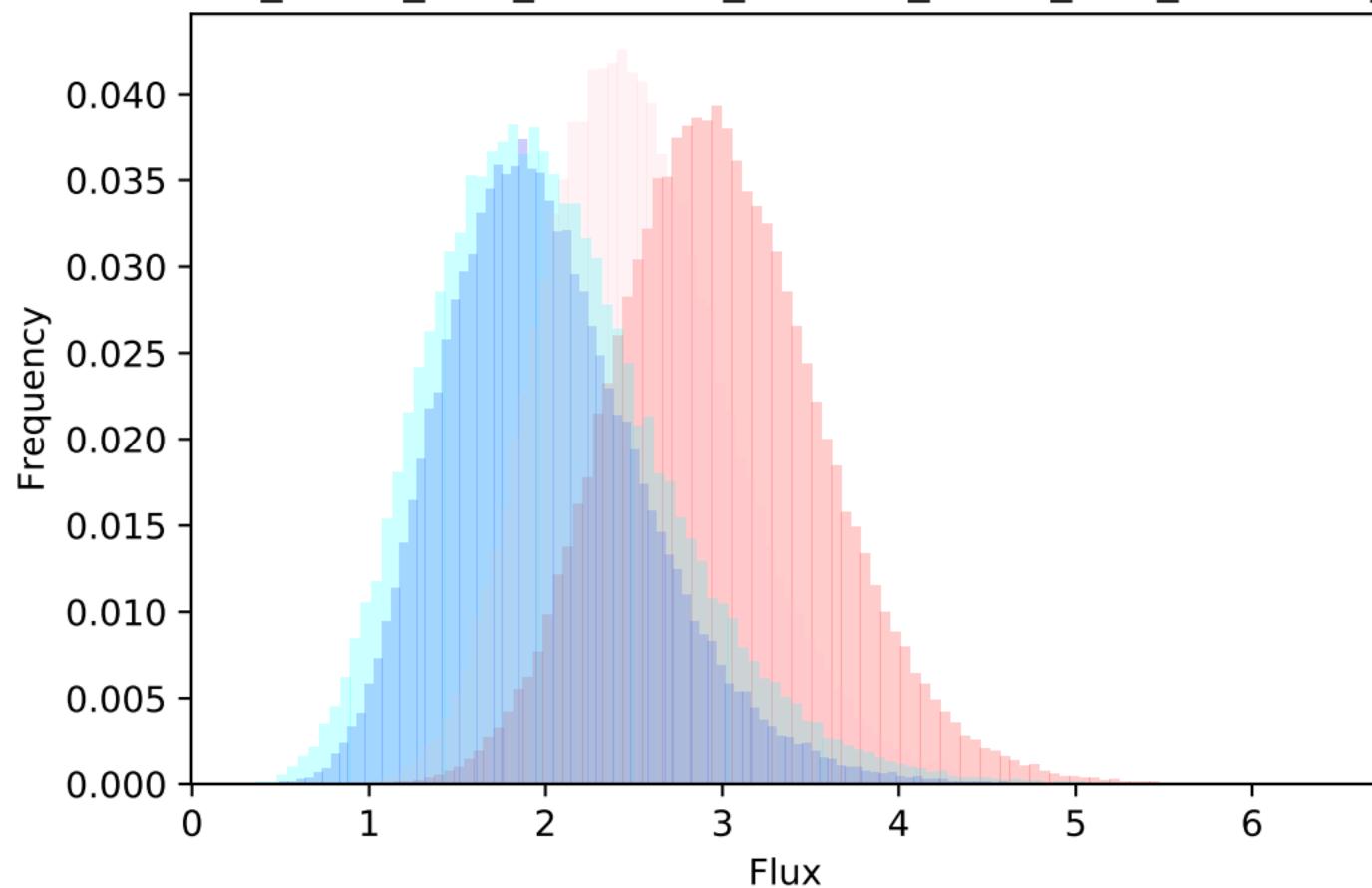
66 : H\_m + Pyr\_m + ThPP\_m --> CO2\_m + H\_DASH\_Eth\_DASH\_ThPP\_m



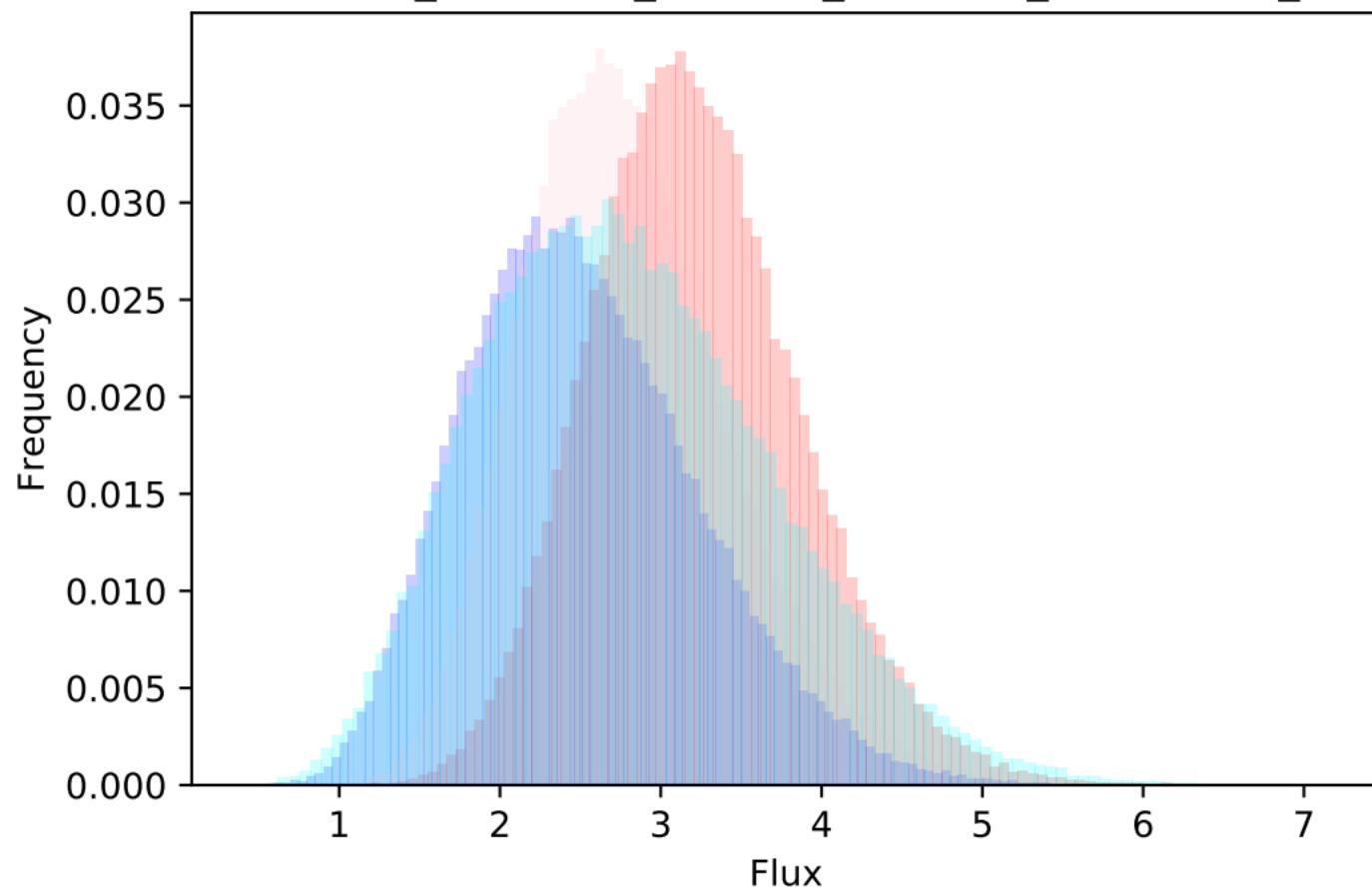
67 : H\_DASH\_Eth\_DASH\_ThPP\_m + LPA\_m --> A\_DASH\_DHL\_m + ThPP\_m



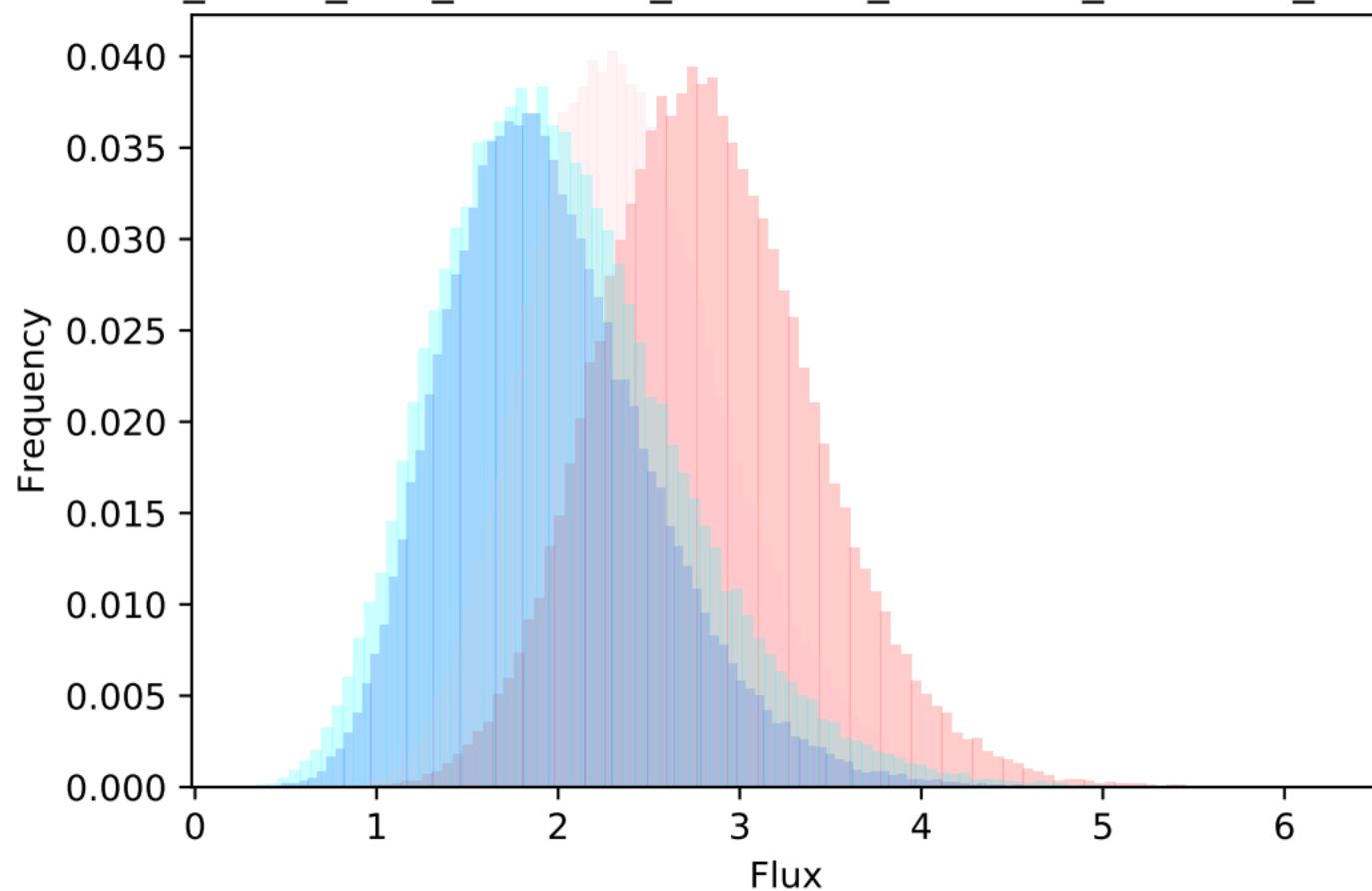
68 : A\_DASH\_DHL\_m + CoA\_m --> A\_DASH\_CoA\_m + DHL\_m



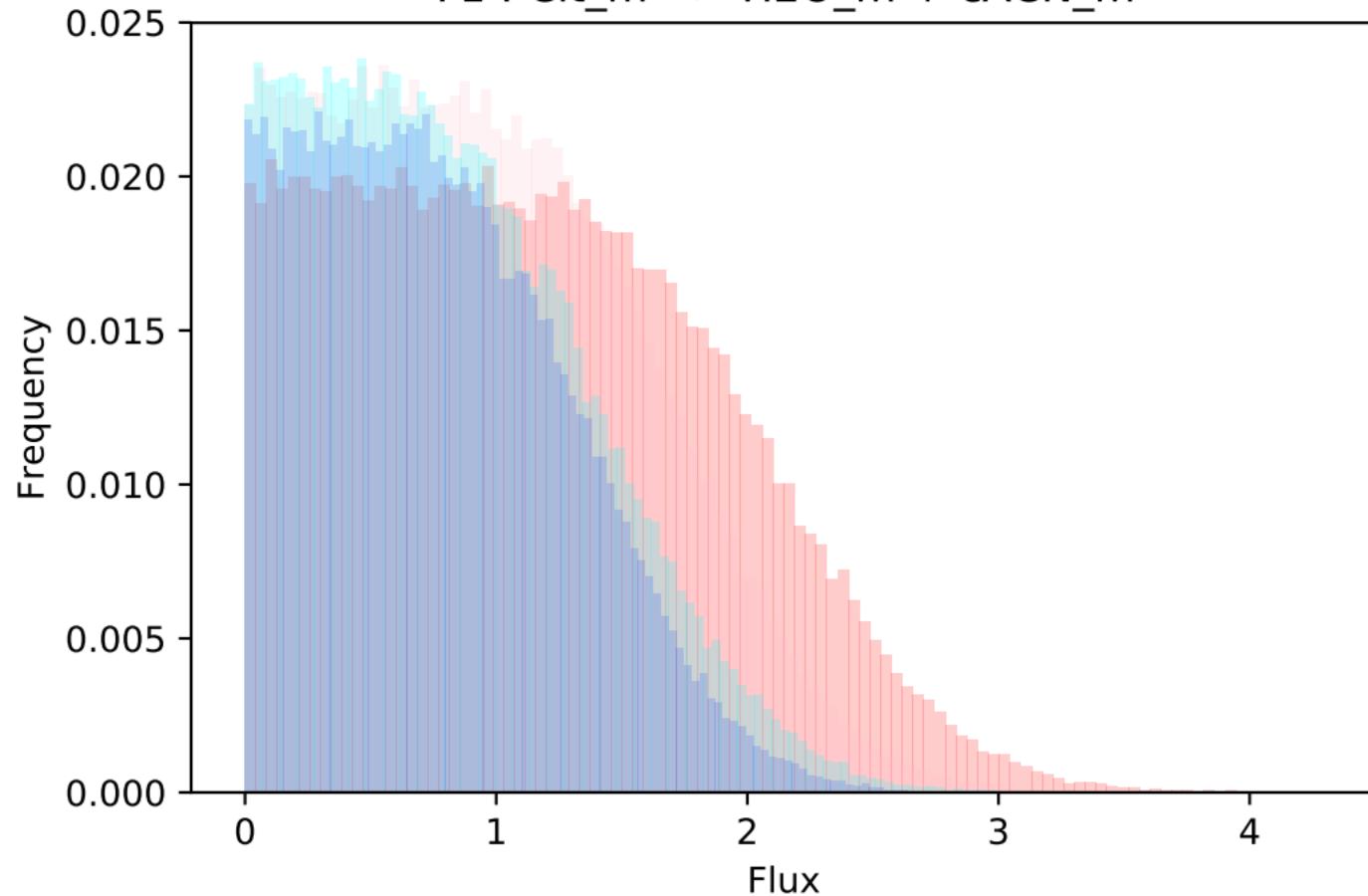
69 : DHL\_m + NAD\_m --> H\_m + LPA\_m + NADH\_m



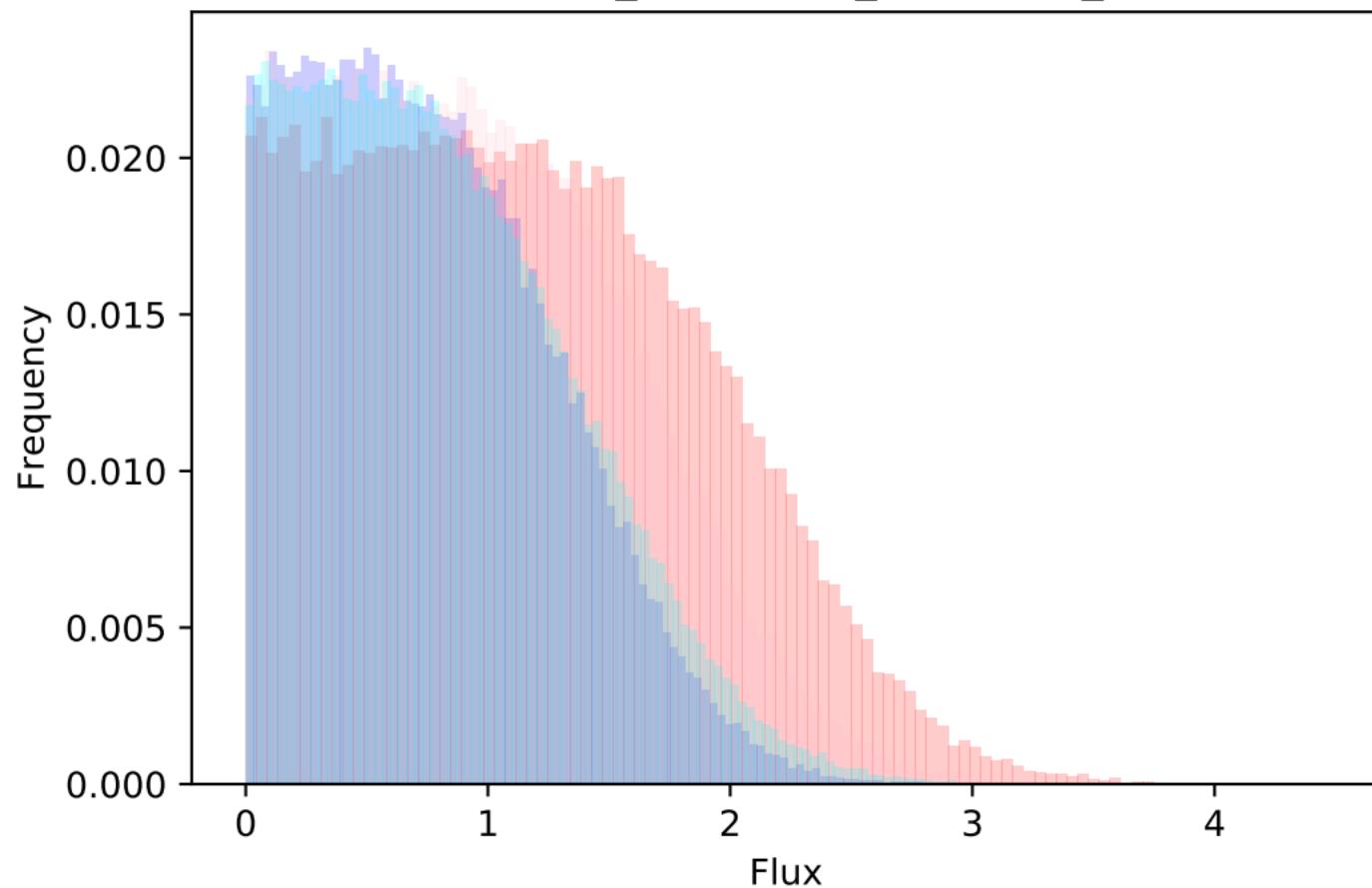
70 : A\_DASH\_CoA\_m + H2O\_m + OAA\_m --> Cit\_m + CoA\_m + H\_m



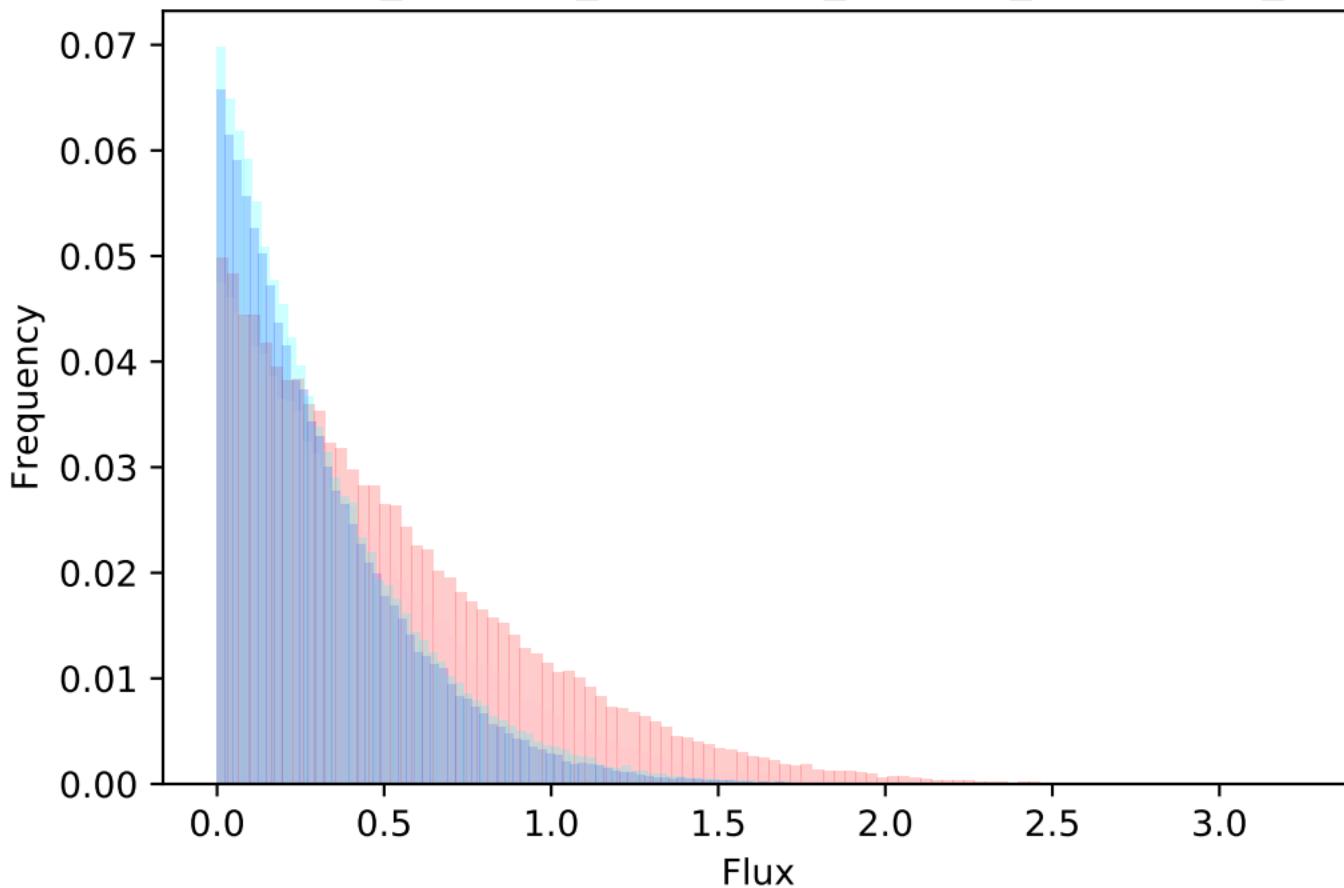
71 : Cit<sub>m</sub> --> H<sub>2</sub>O<sub>m</sub> + cACN<sub>m</sub>



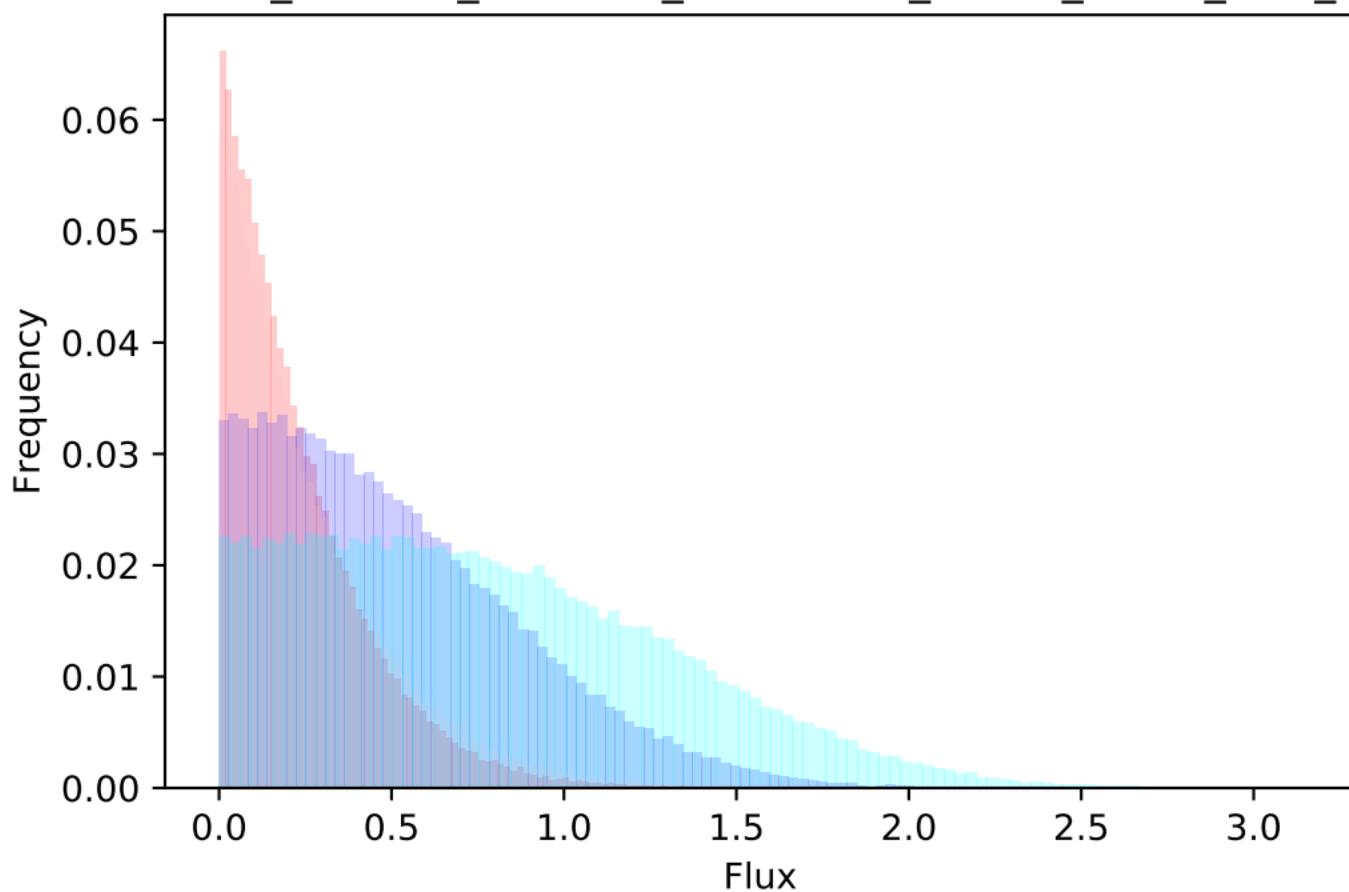
72 : H<sub>2</sub>O\_m + cACN\_m --> iCit\_m



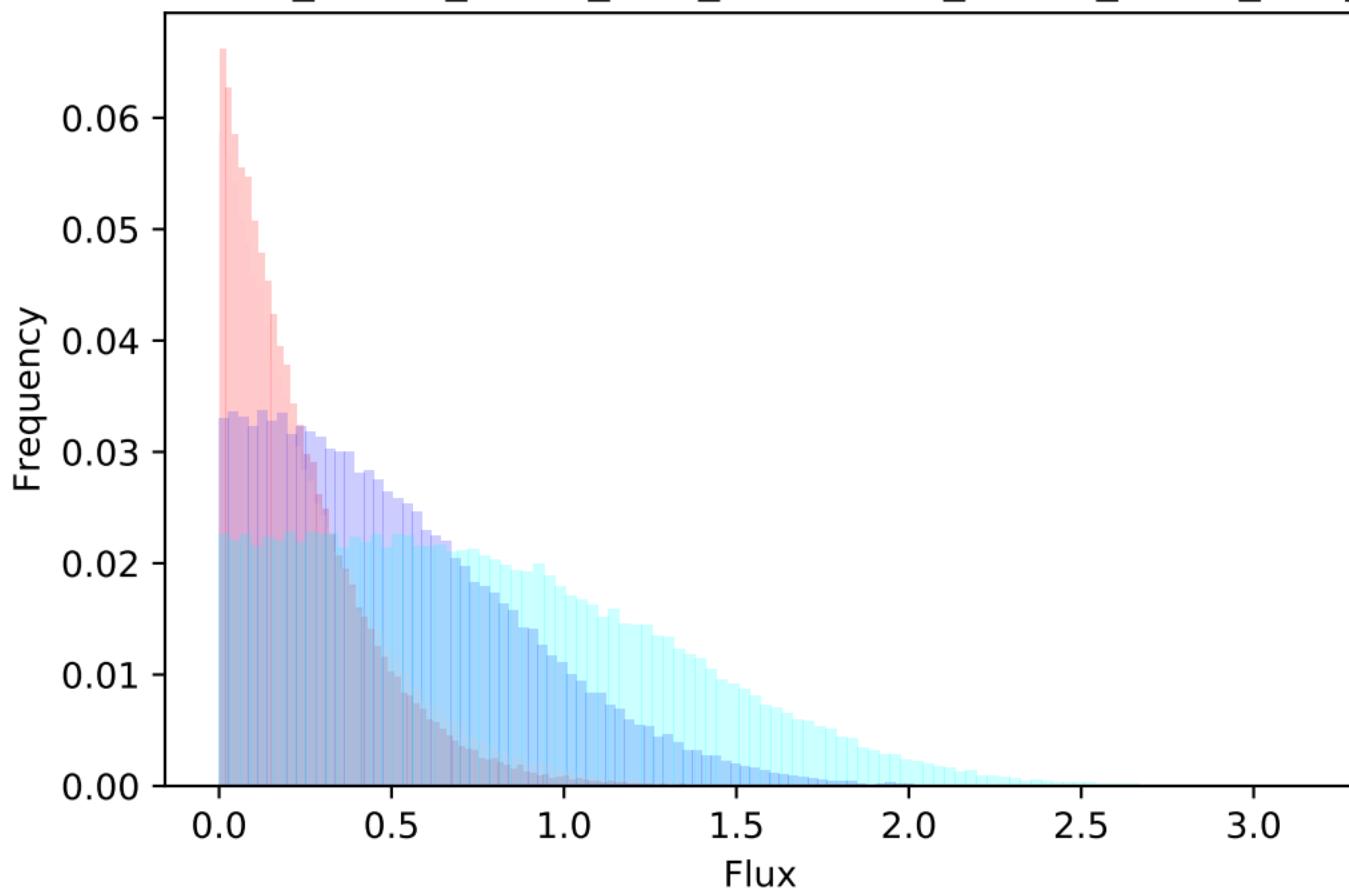
73 : NAD<sub>m</sub> + iCit<sub>m</sub> --> CO2<sub>m</sub> + KG<sub>m</sub> + NADH<sub>m</sub>



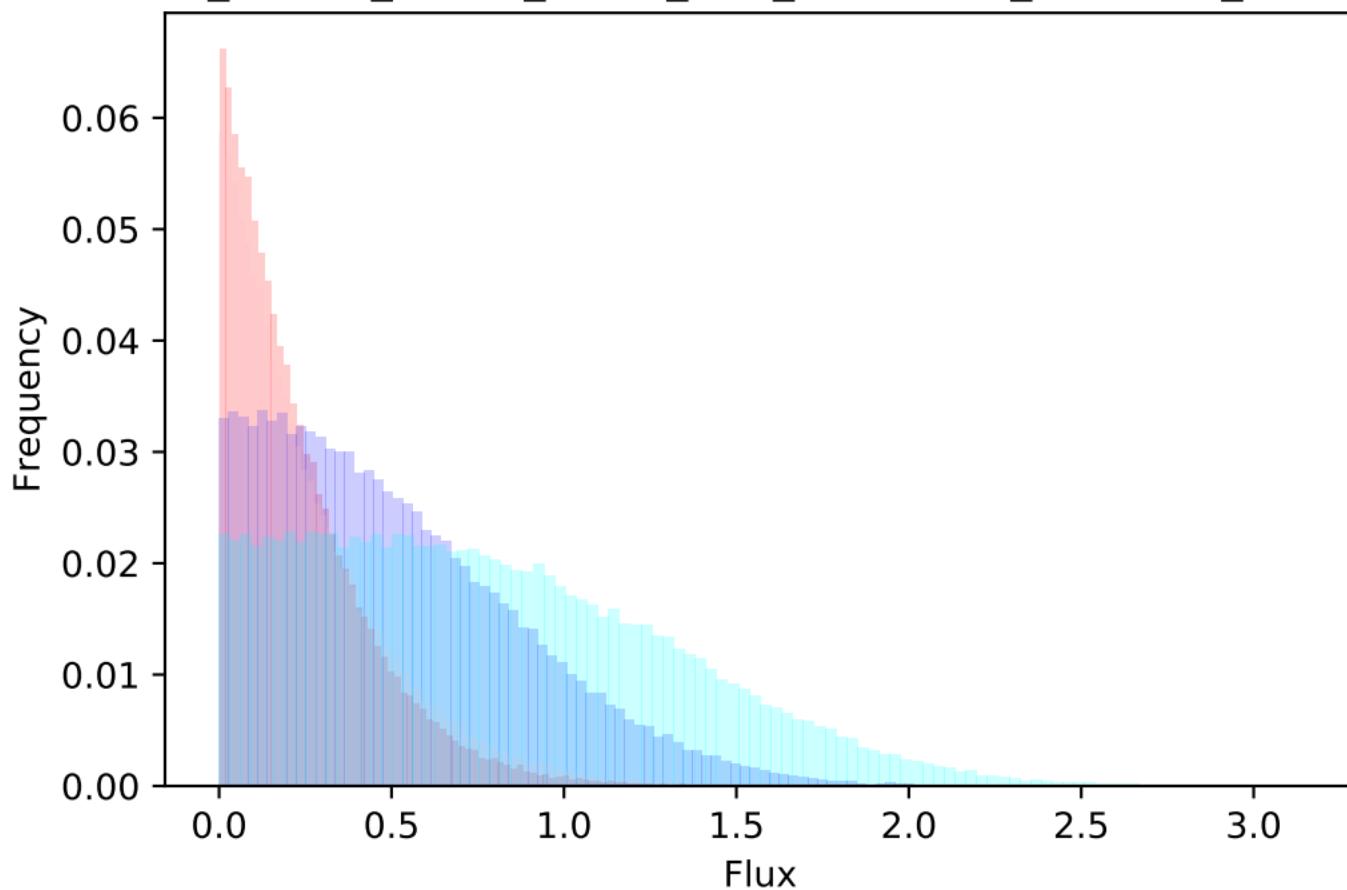
74 : H\_m + KG\_m + LPA\_m --> CO2\_m + S\_DASH\_DHL\_m



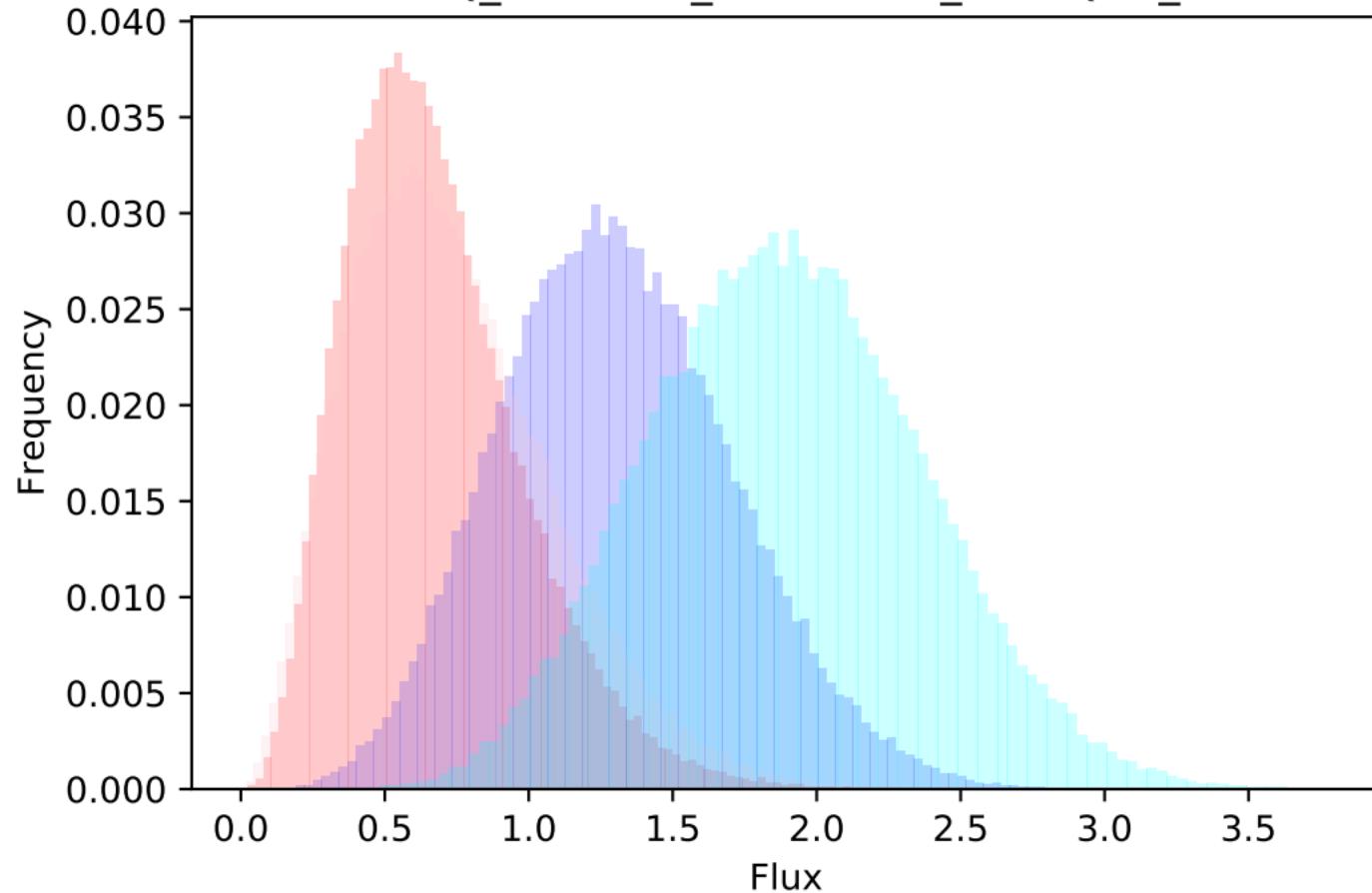
75 : CoA\_m + S\_DASH\_DHL\_m --> DHL\_m + S\_DASH\_CoA\_m



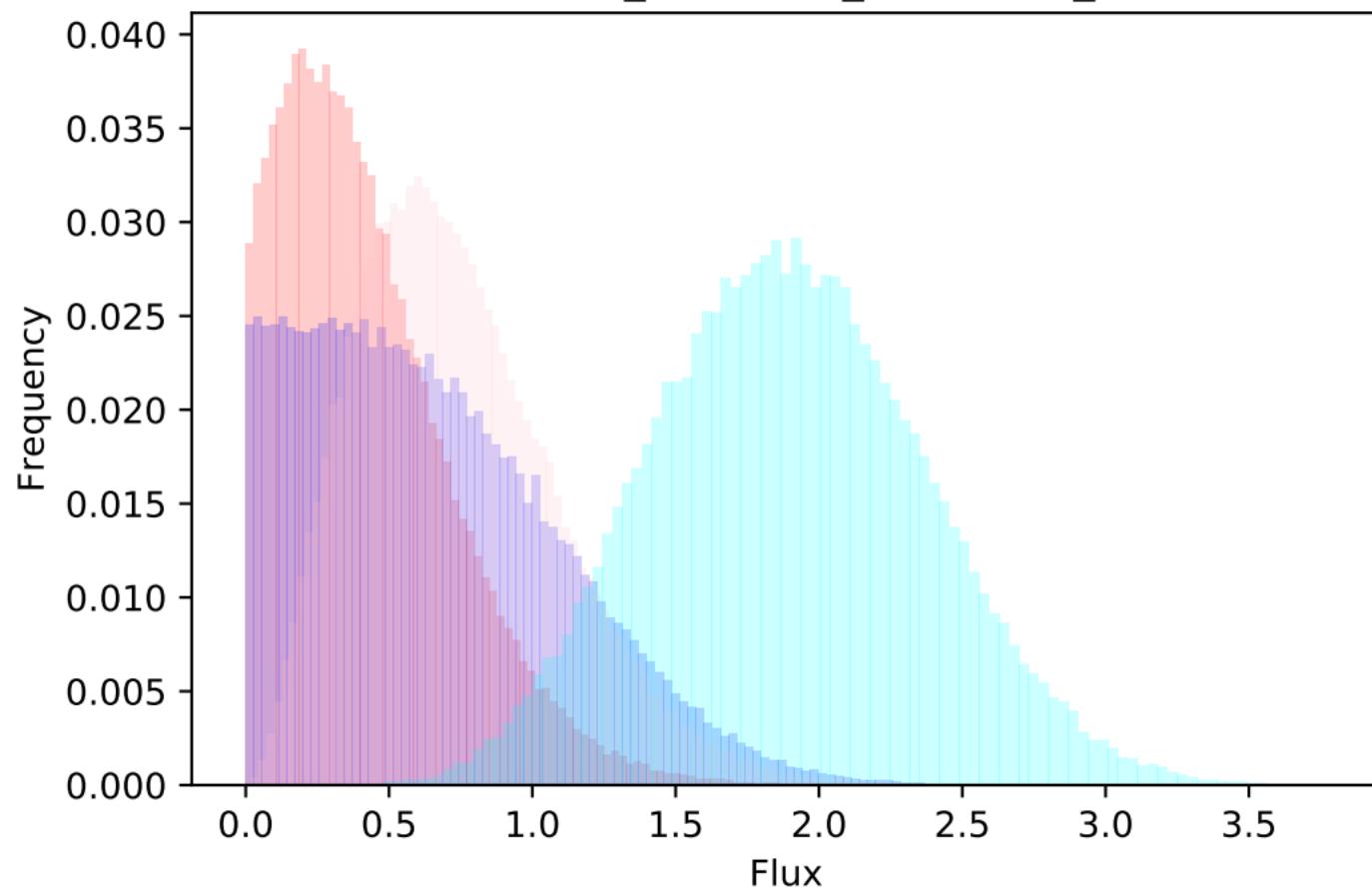
76 : ADP\_m + Pi\_m + S\_DASH\_CoA\_m --> ATP\_m + CoA\_m + SCA\_m



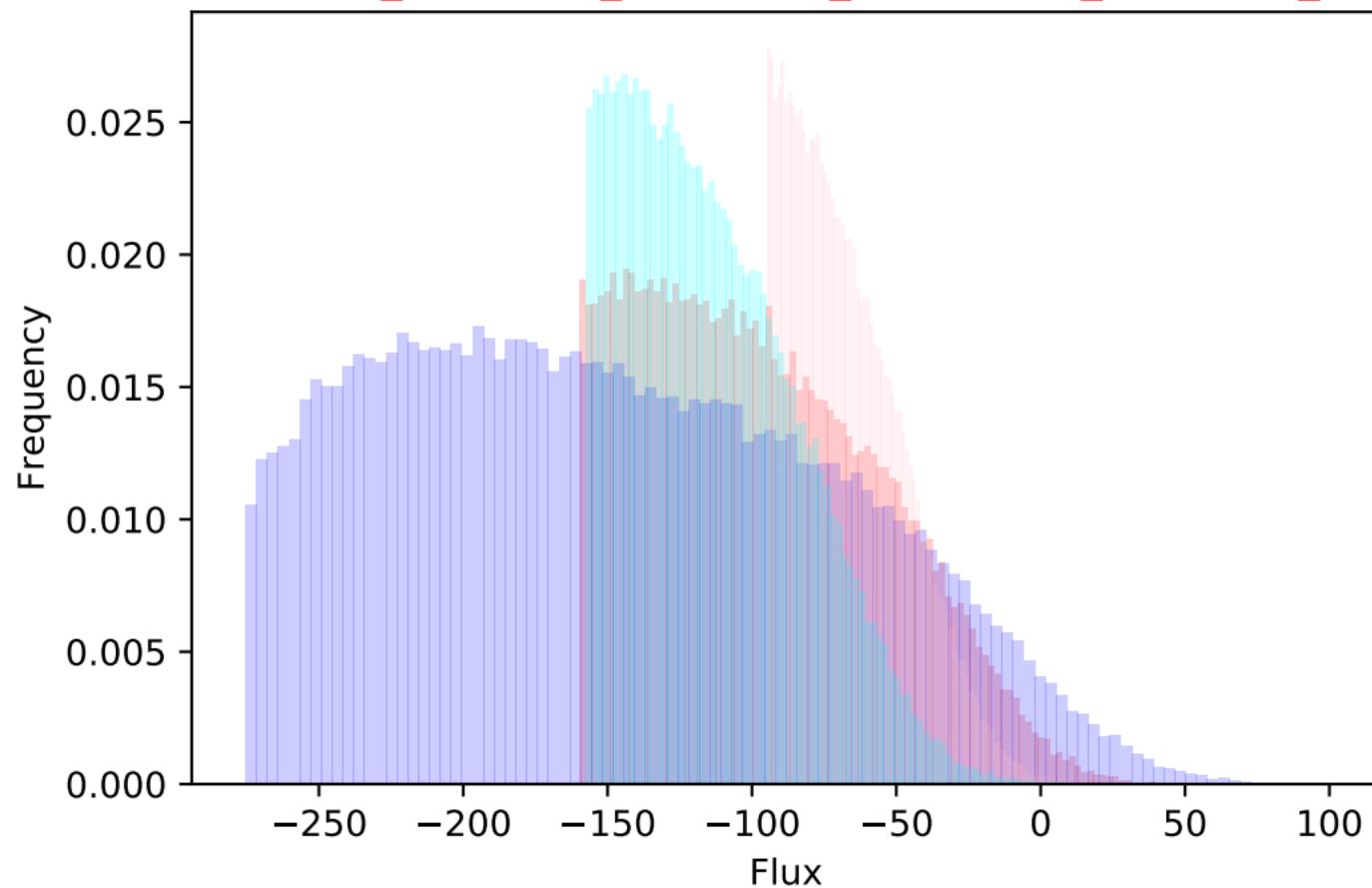
77 : Q<sub>m</sub> + SCA<sub>m</sub> --> Fum<sub>m</sub> + QH<sub>2</sub><sub>m</sub>

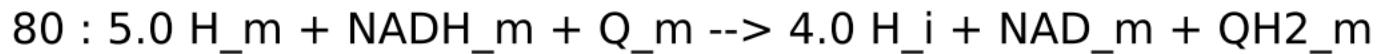


78 : Fum\_m + H2O\_m --> Mal\_m



79 : Mal\_m + NAD\_m <=> H\_m + NADH\_m + OAA\_m





Frequency

0.040  
0.035  
0.030  
0.025  
0.020  
0.015  
0.010  
0.005  
0.000

20

30

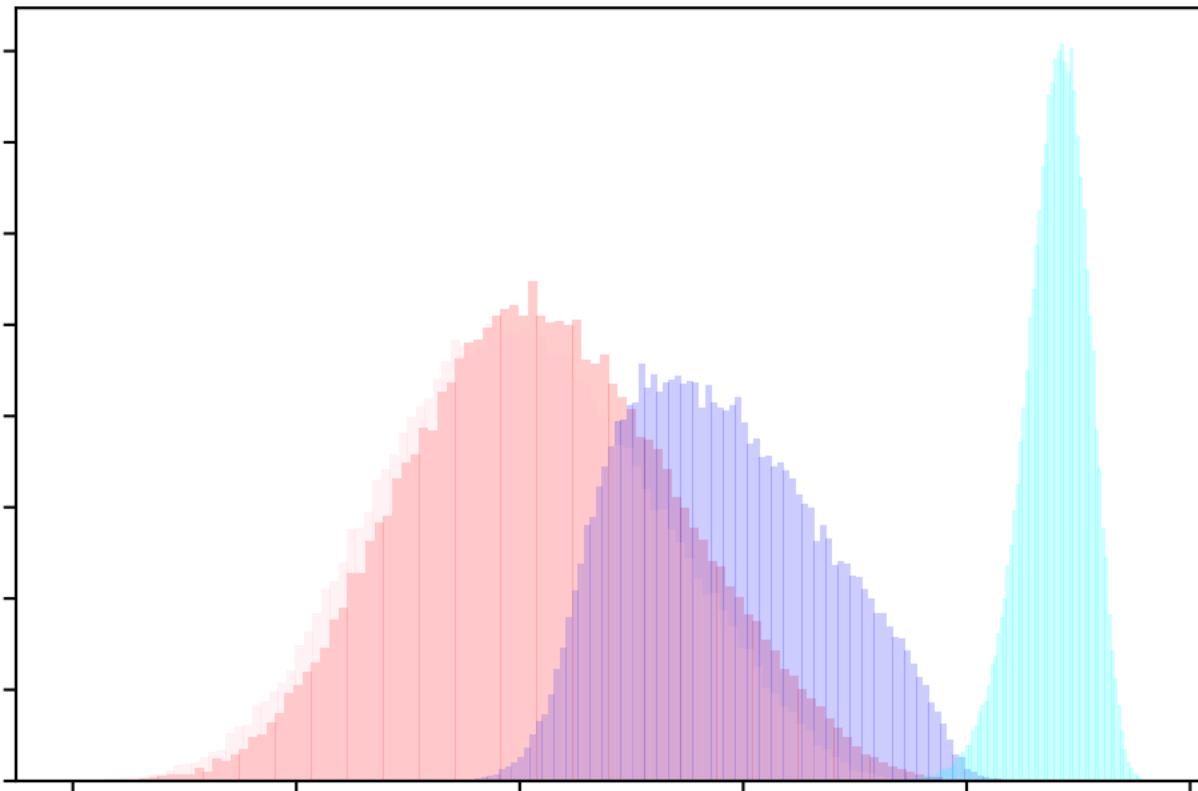
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50

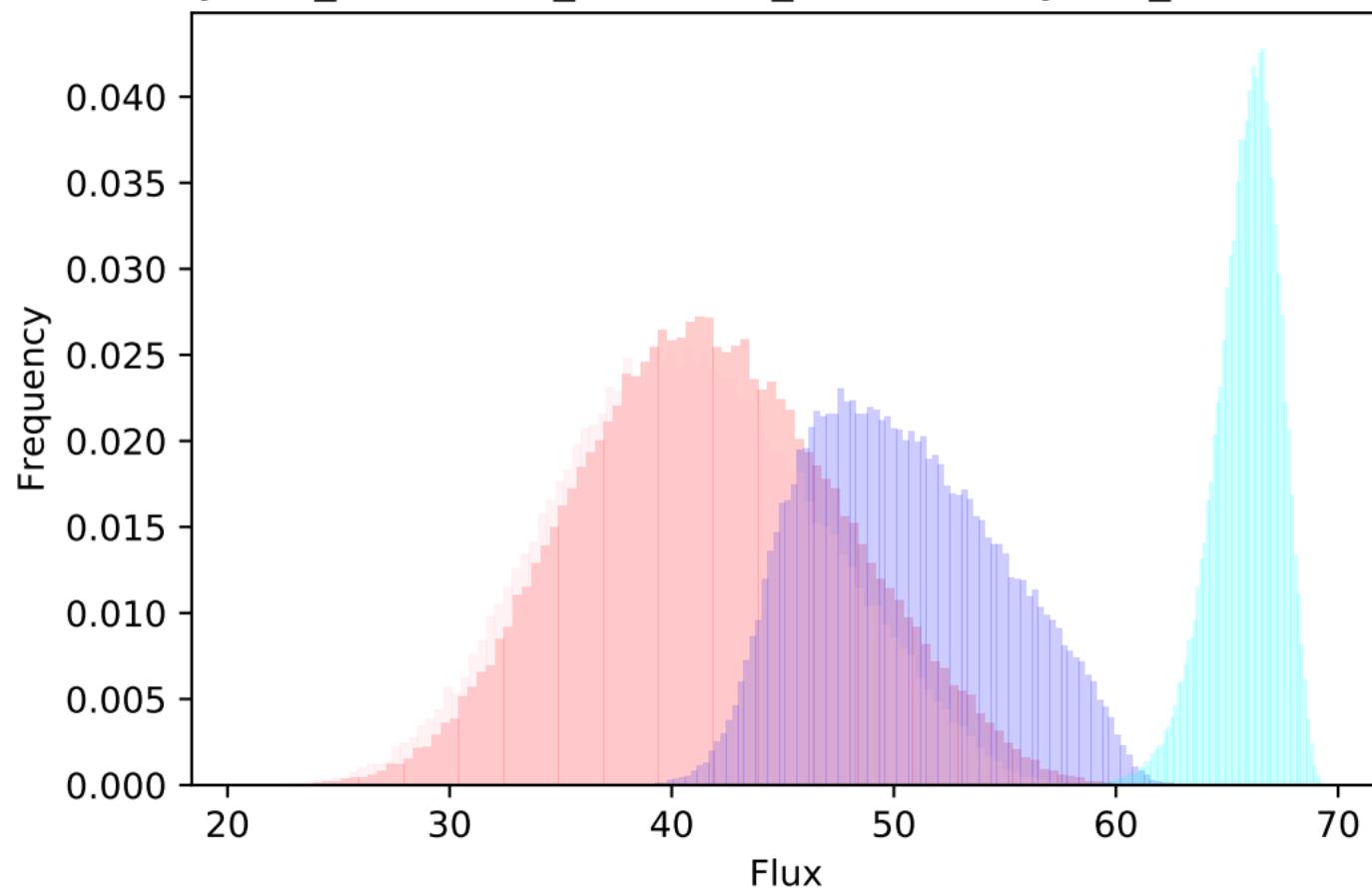
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70

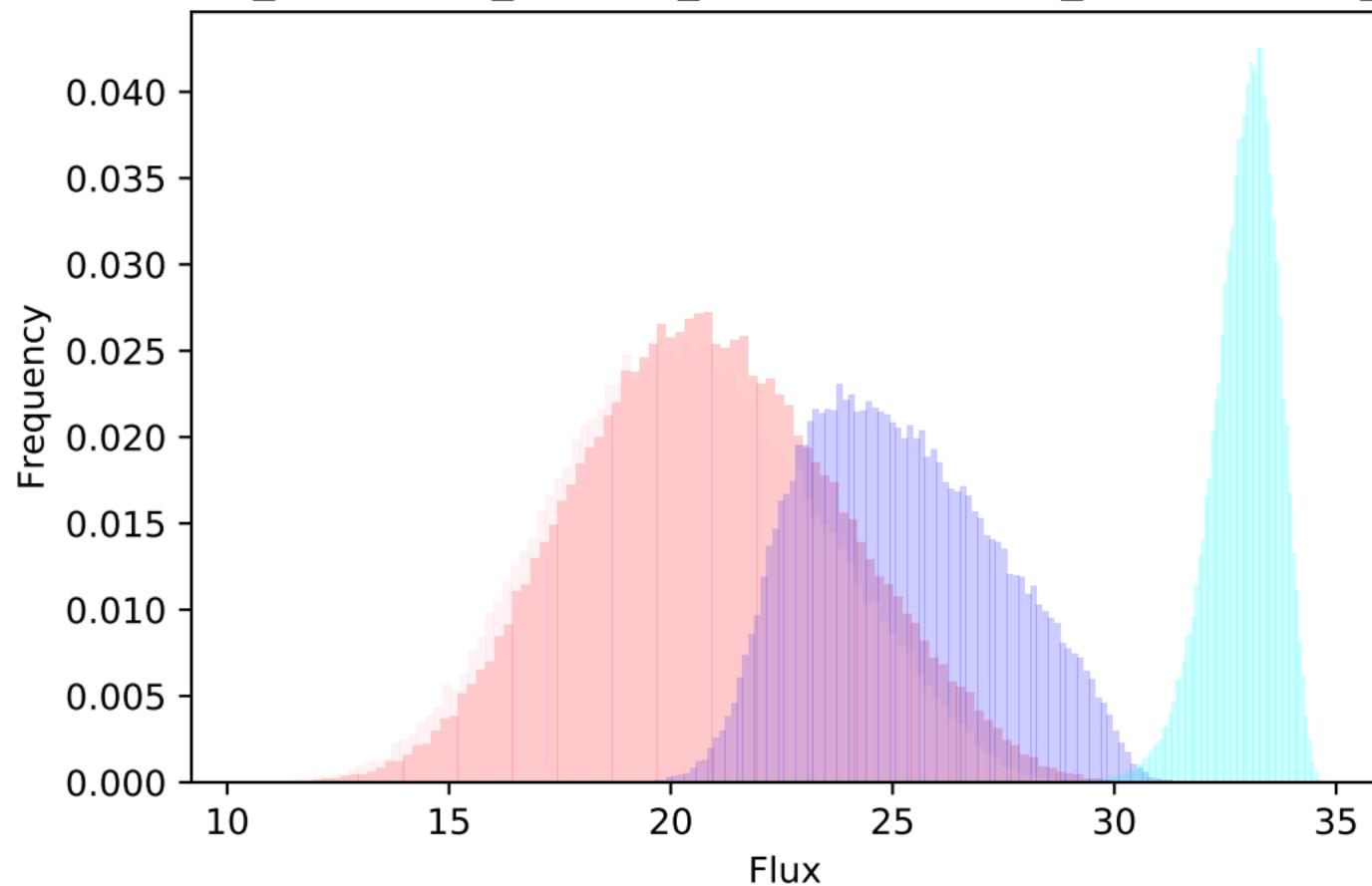
Flux

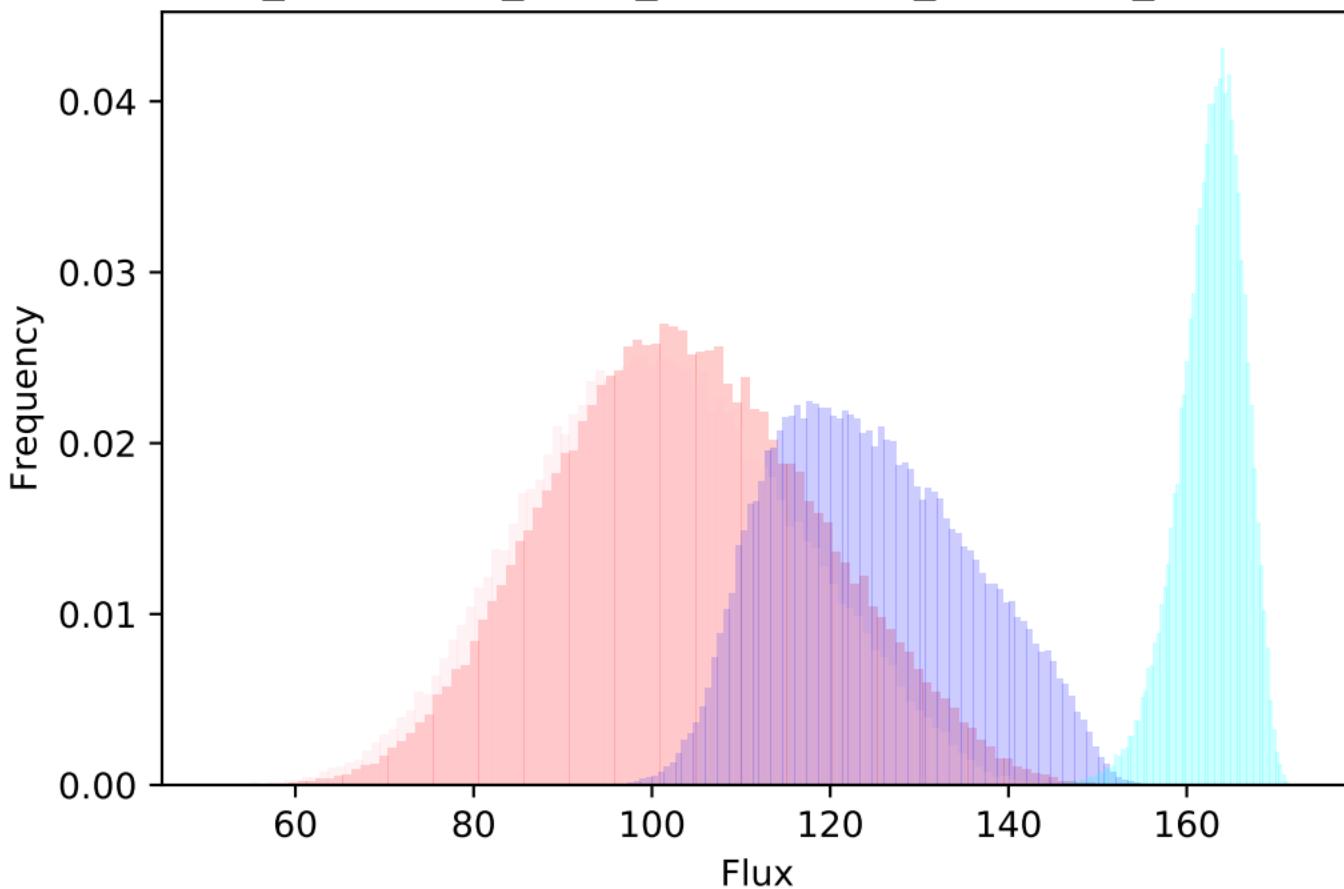
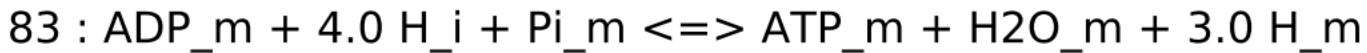


81 : 2.0 Cytcox\_m + 2.0 H\_m + QH2\_m --> 2.0 Cytcrd\_m + 4.0 H\_i + Q\_

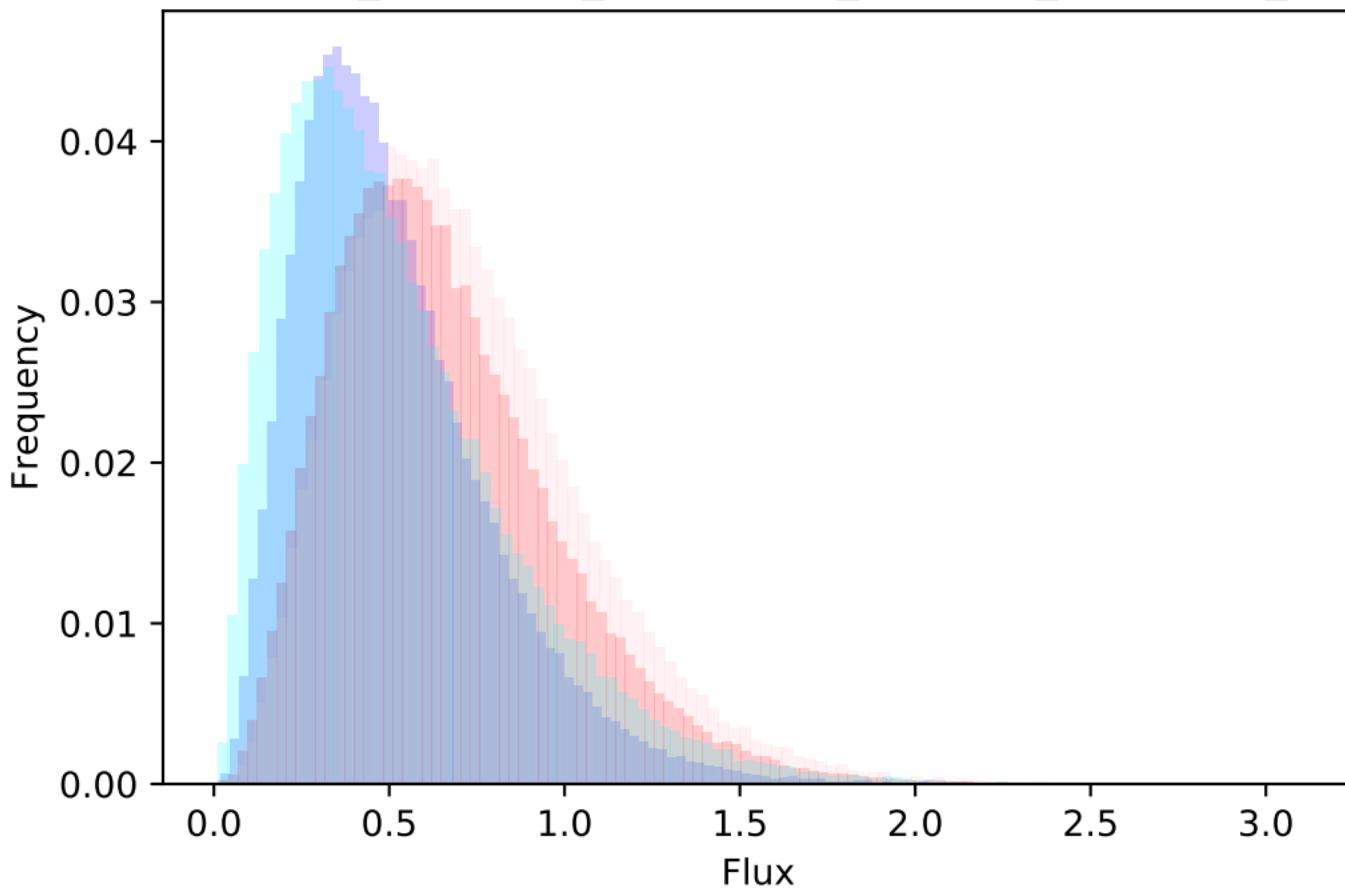


: 4.0 Cytcrd\_m + 8.0 H\_m + O2\_m --> 4.0 Cytcox\_m + 2.0 H2O\_m + 4.0

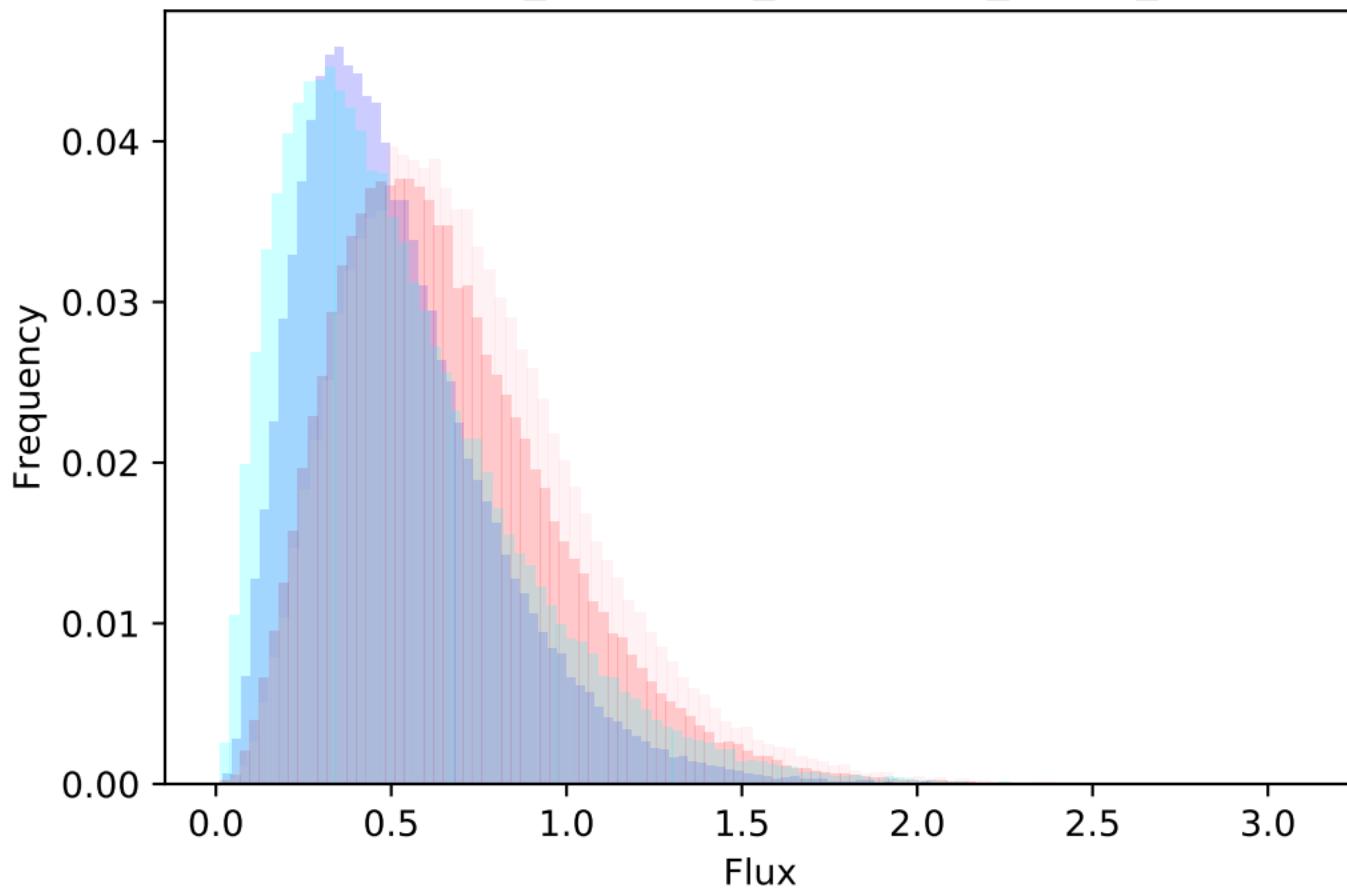




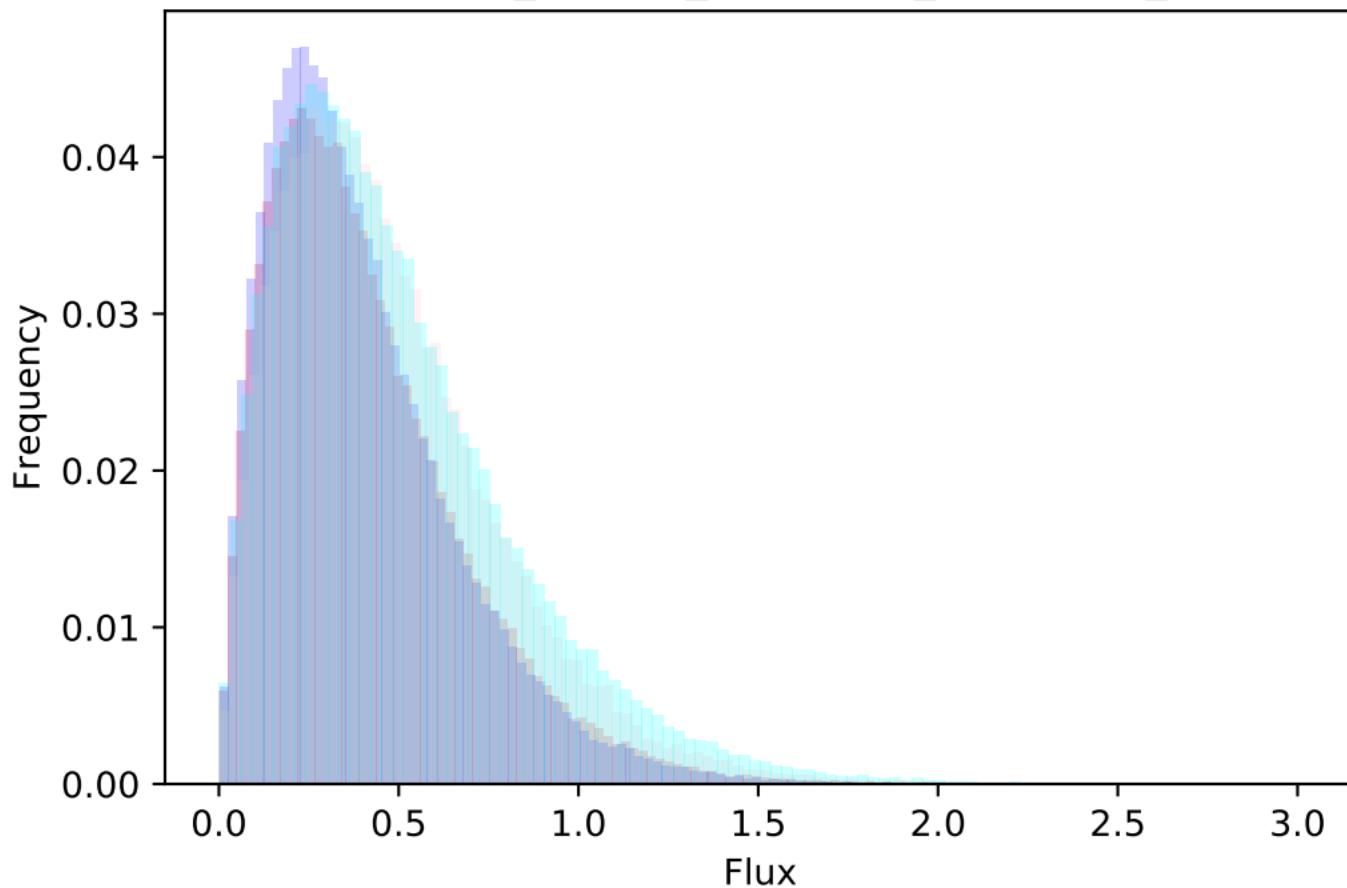
84 : O<sub>2</sub>\_h + RuBP\_h --> 2.0 H\_h + PGA\_h + PGCA\_h



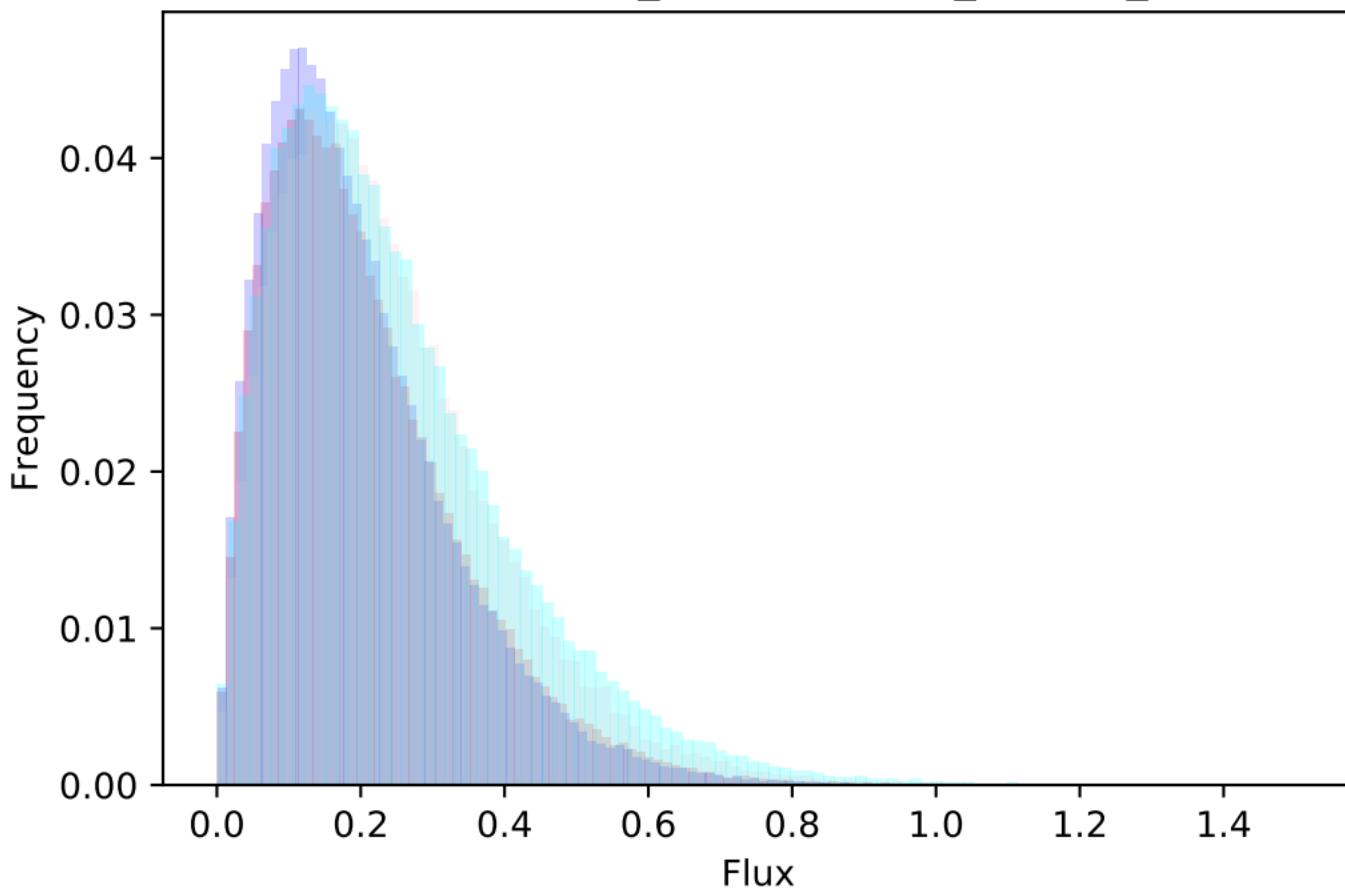
85 : H2O\_h + PGCA\_h --> GCA\_h + Pi\_h



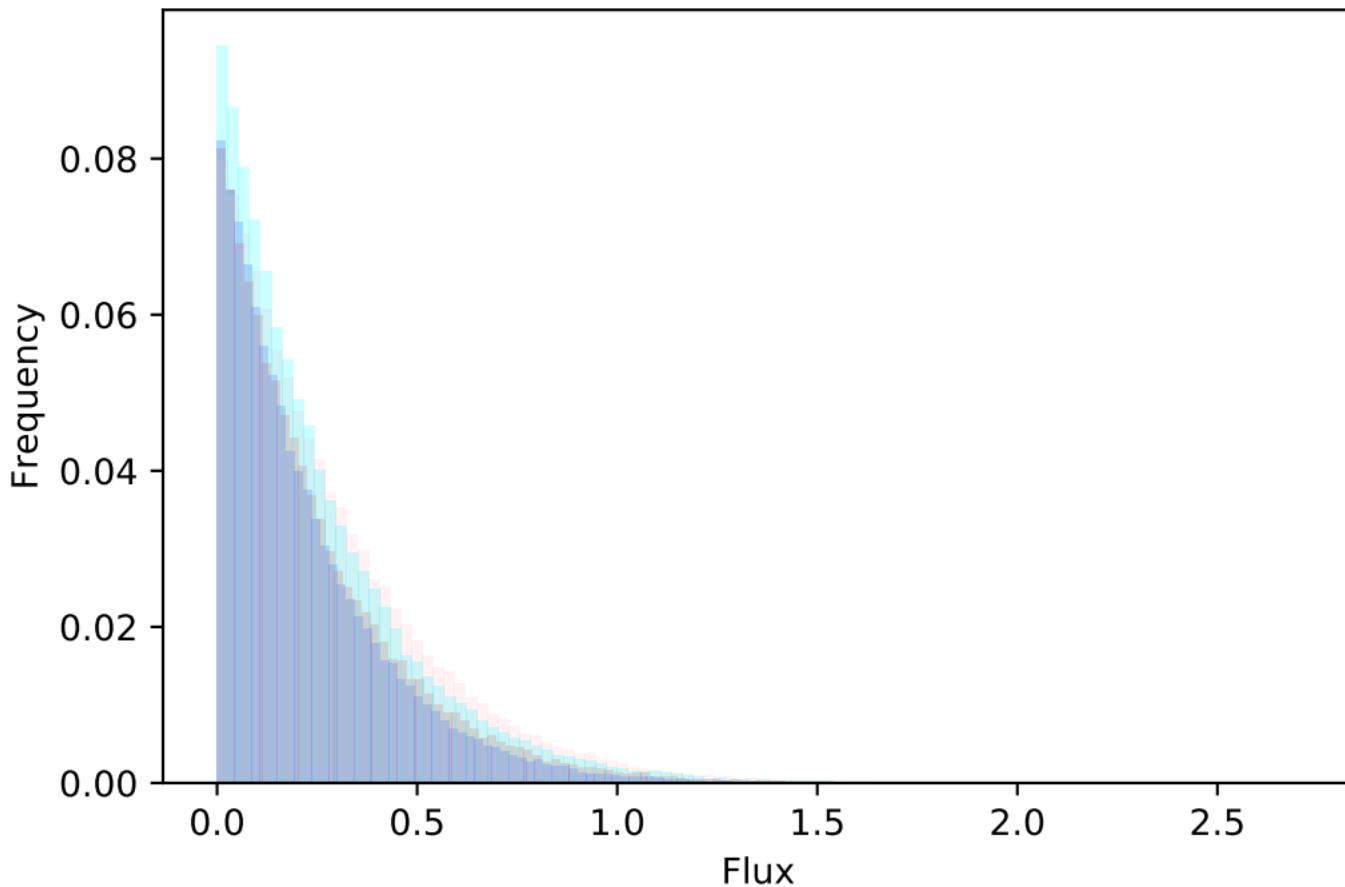
86 : GCA\_p + O2\_p --> GLX\_p + H2O2\_p



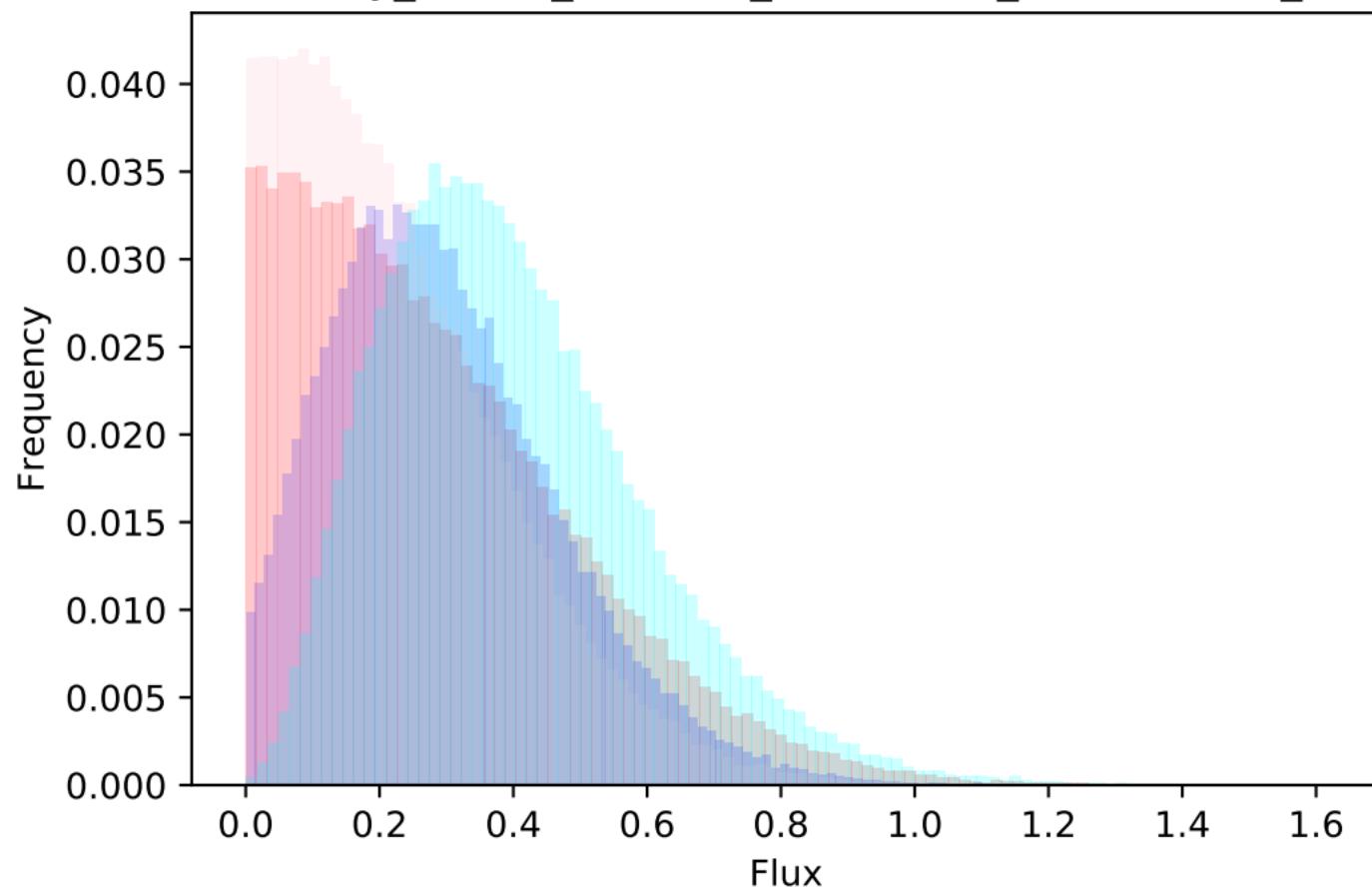
87 : 2.0 H2O2\_p --> 2.0 H2O\_p + O2\_p



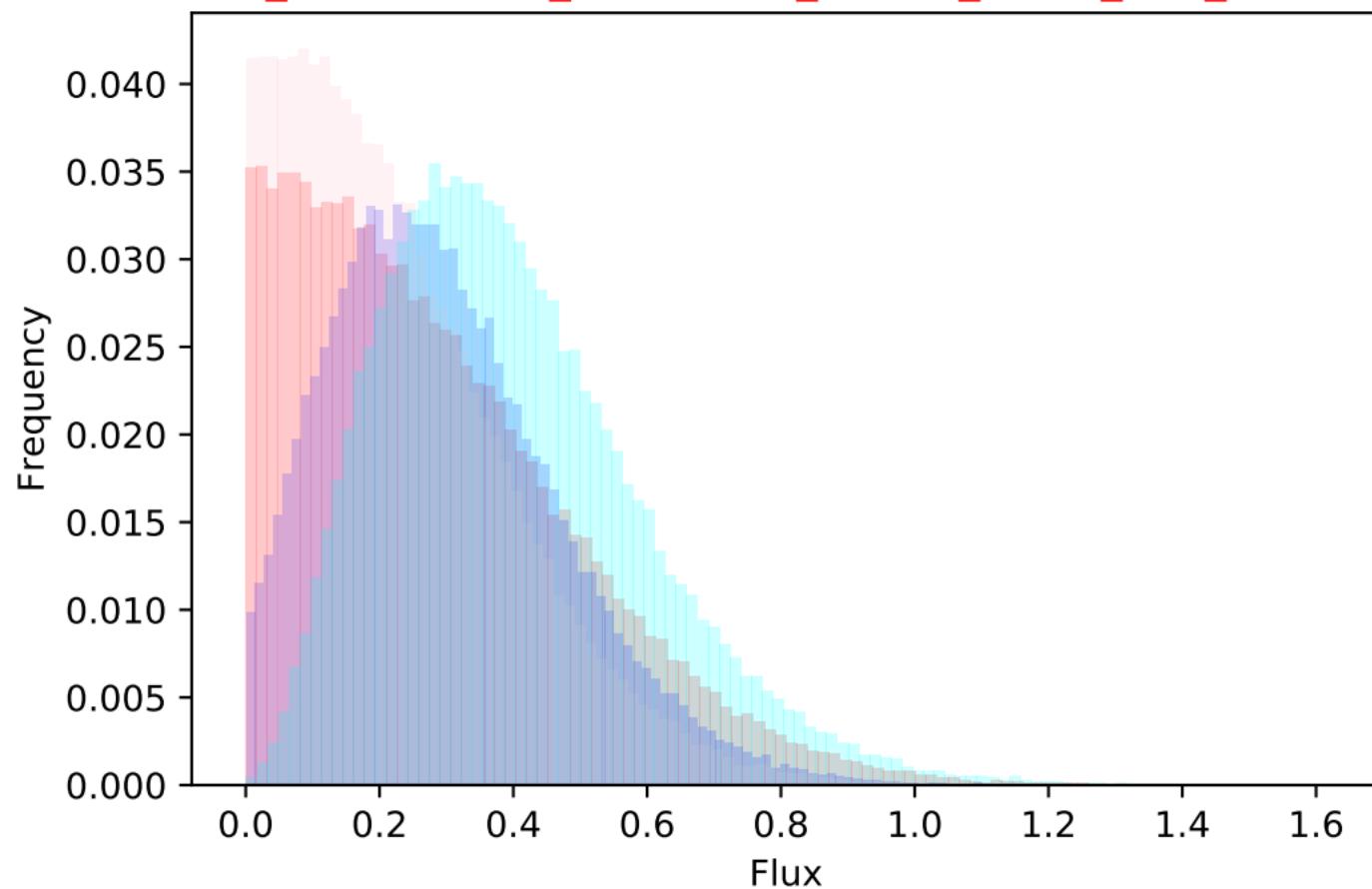
88 : GLX\_p + Glu\_p --> Gly\_p + KG\_p



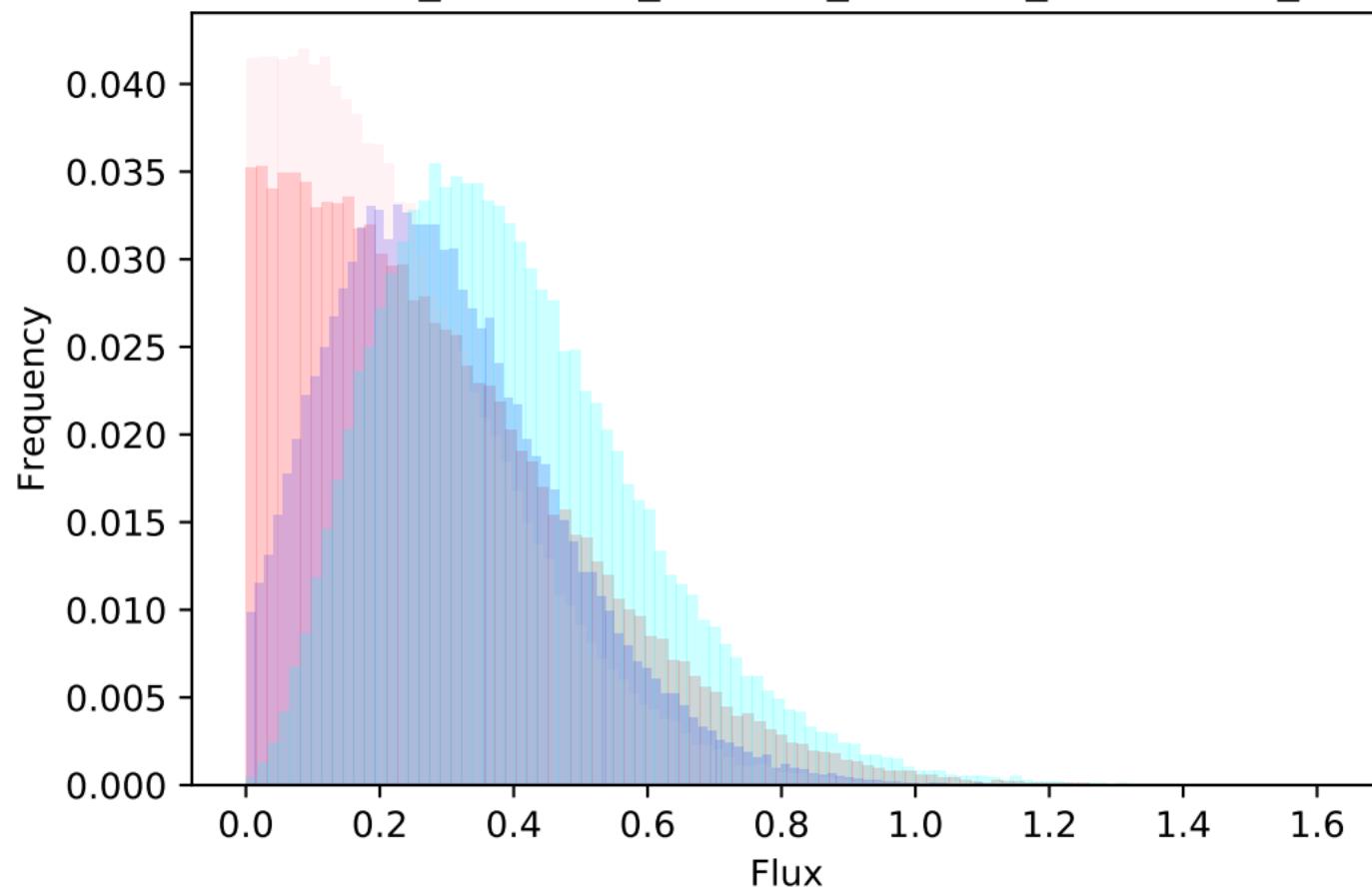
89 : Gly\_m + H\_m + LPL\_m --> CO2\_m + amDHP\_m



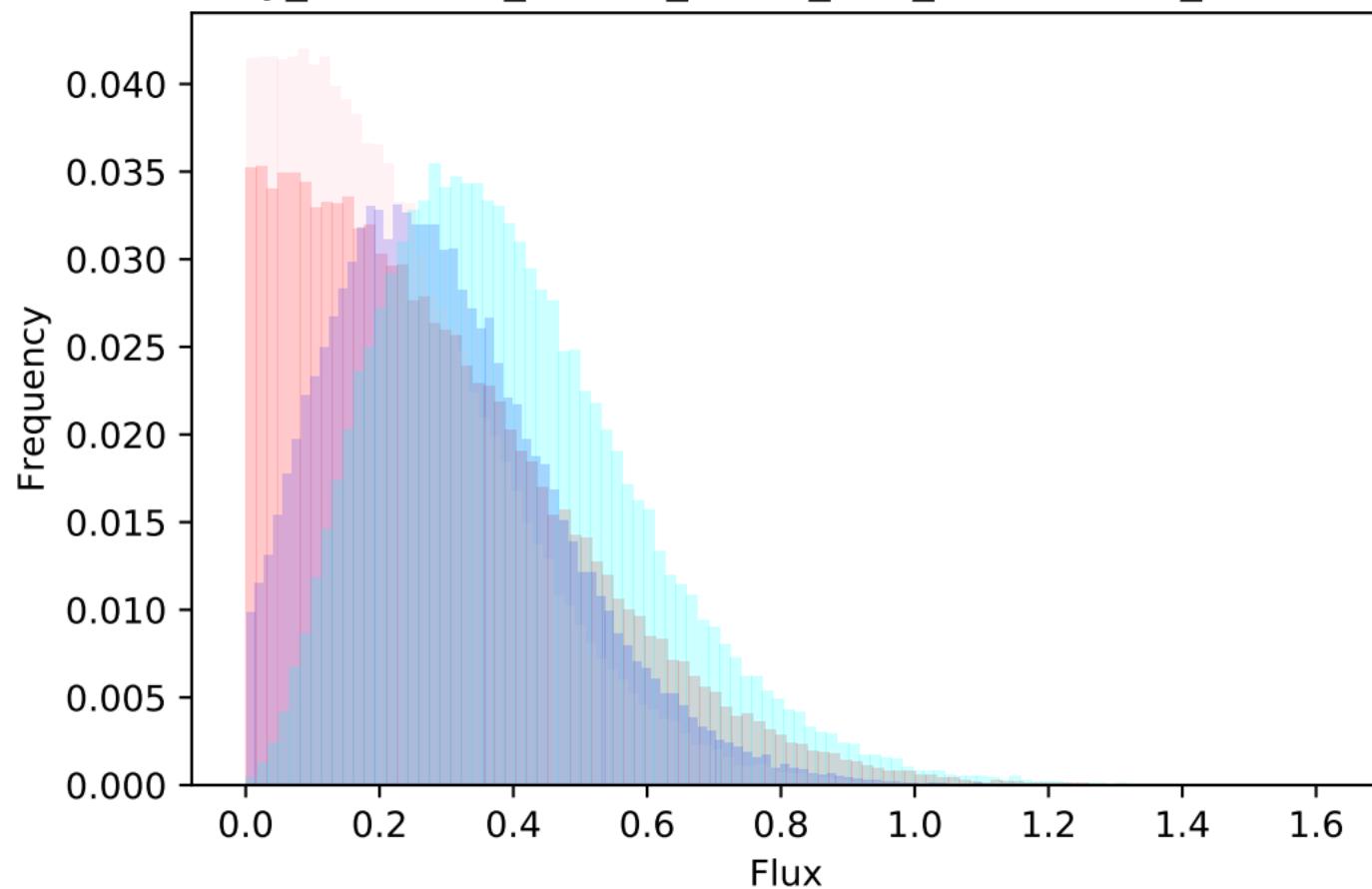
90 : THF\_m + amDHP\_m --> DHP\_m + M\_DASH\_THF\_m + NH4\_m



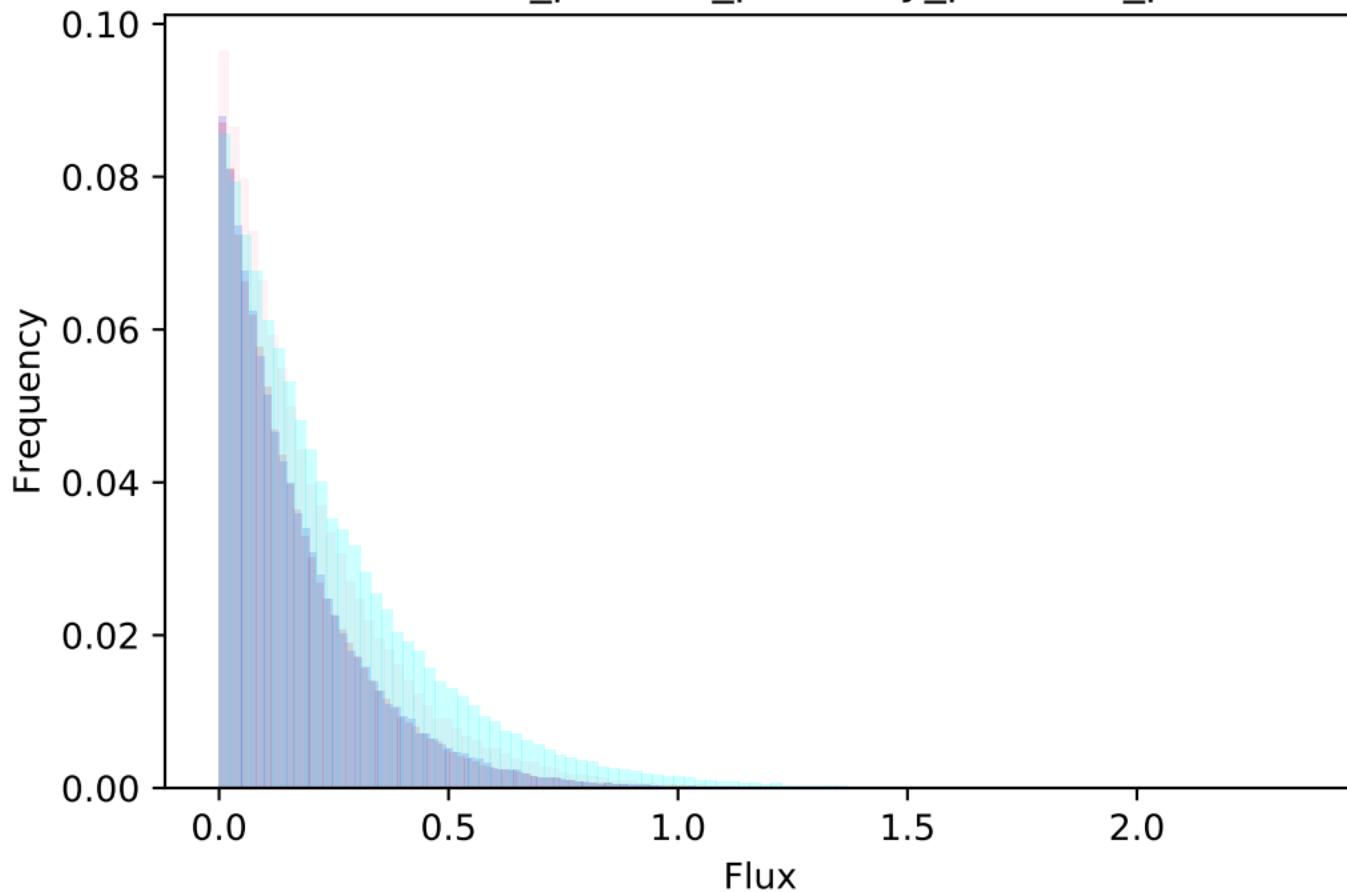
91 : DHP\_m + NAD\_m --> H\_m + LPL\_m + NADH\_m



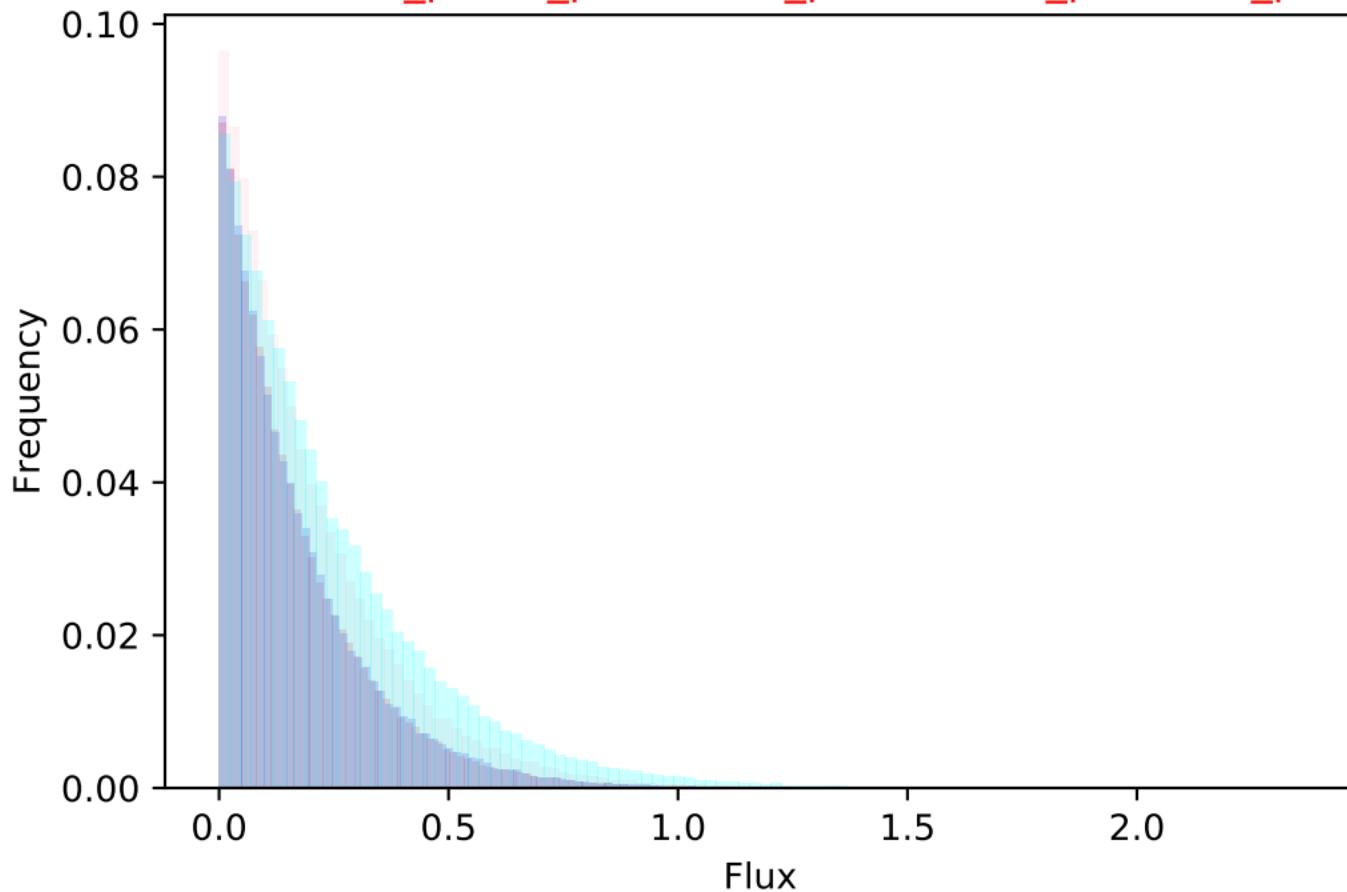
92 : Gly\_m + H2O\_m + M\_DASH\_ THF\_m <=> Ser\_m + THF\_m



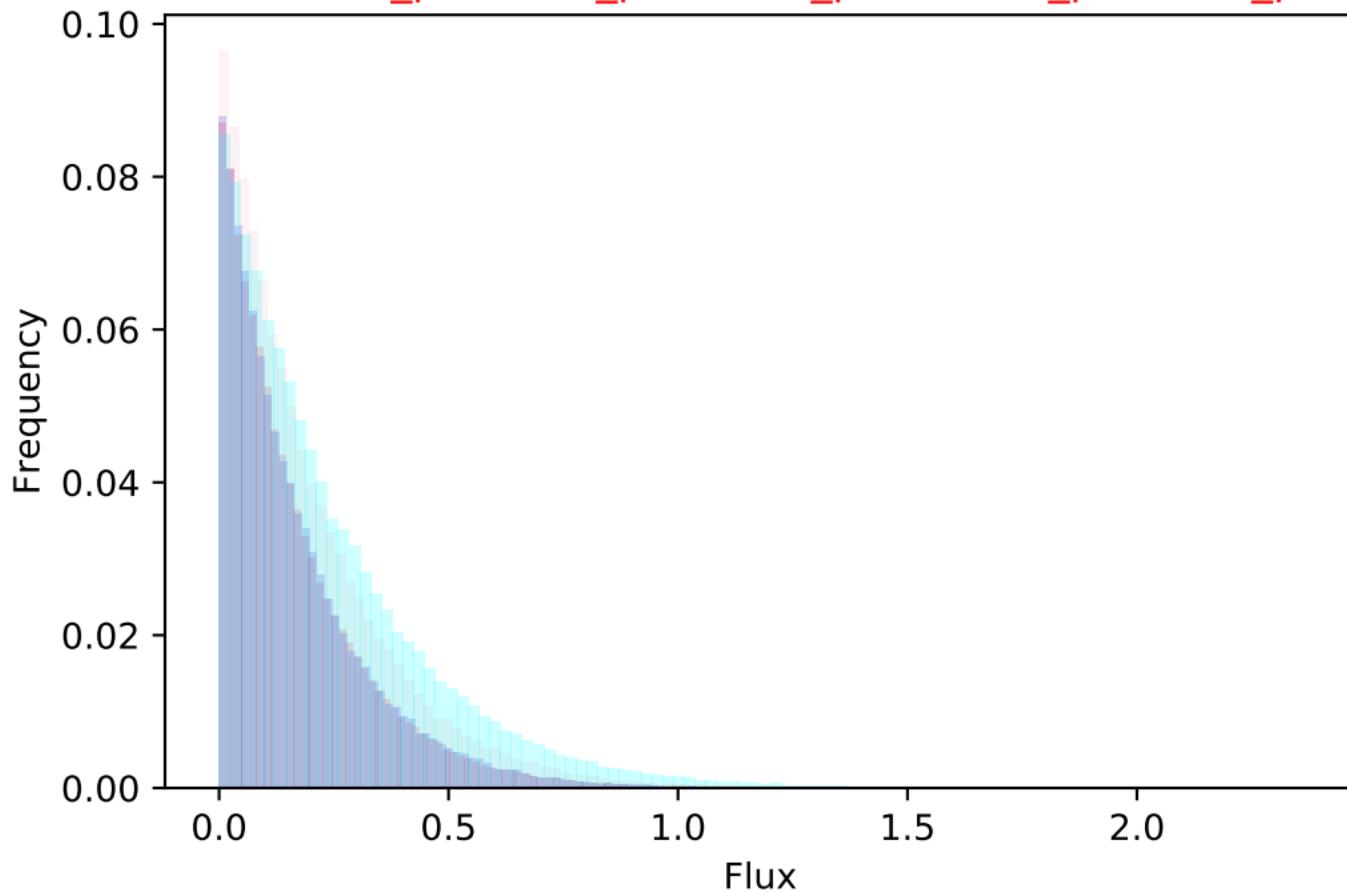
93 : GLX\_p + Ser\_p --> Gly\_p + HPR\_p

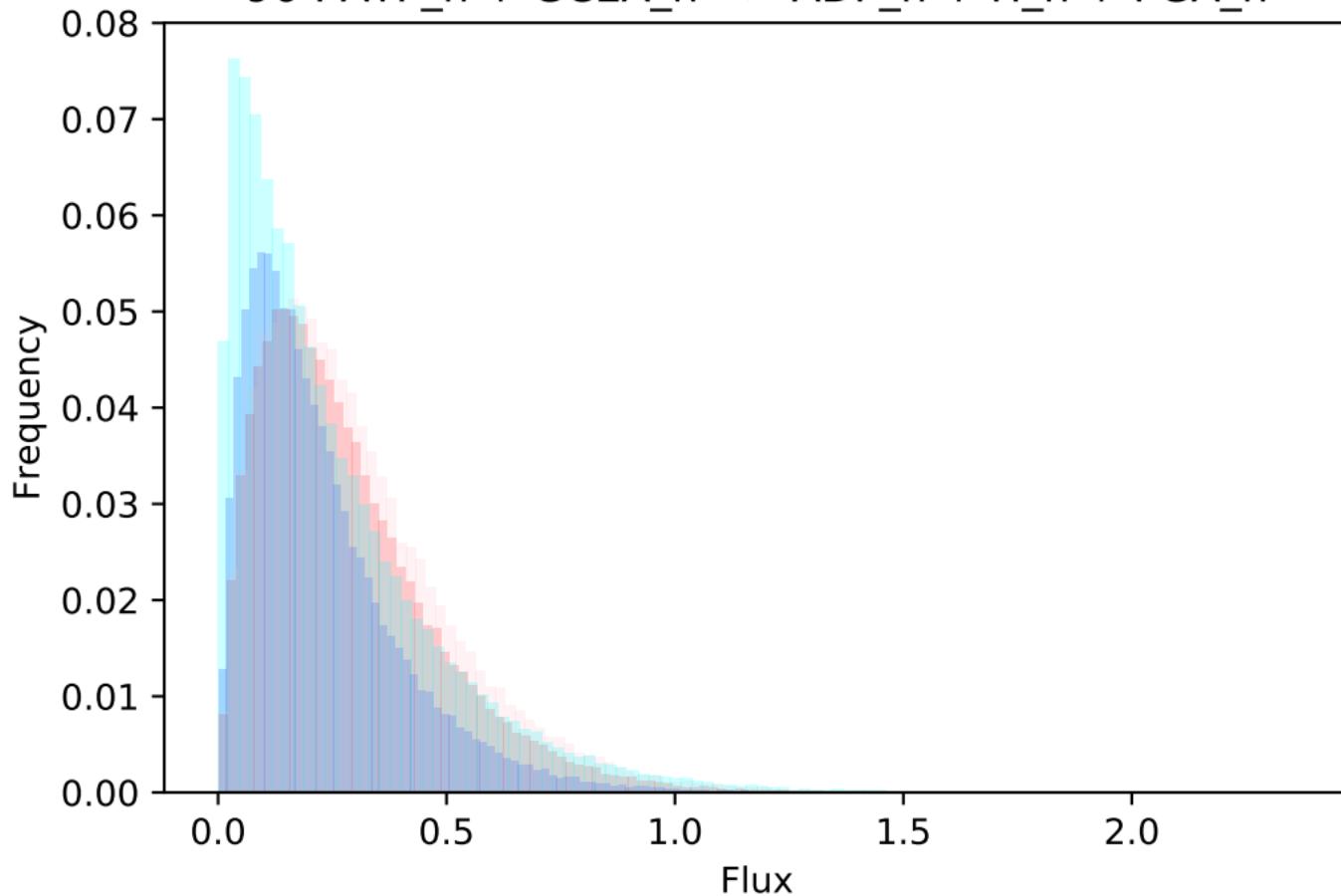
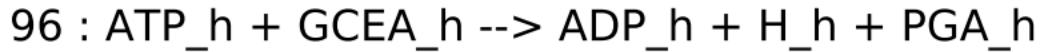


94 : HPR\_p + H\_p + NADH\_p --> GCEA\_p + NAD\_p

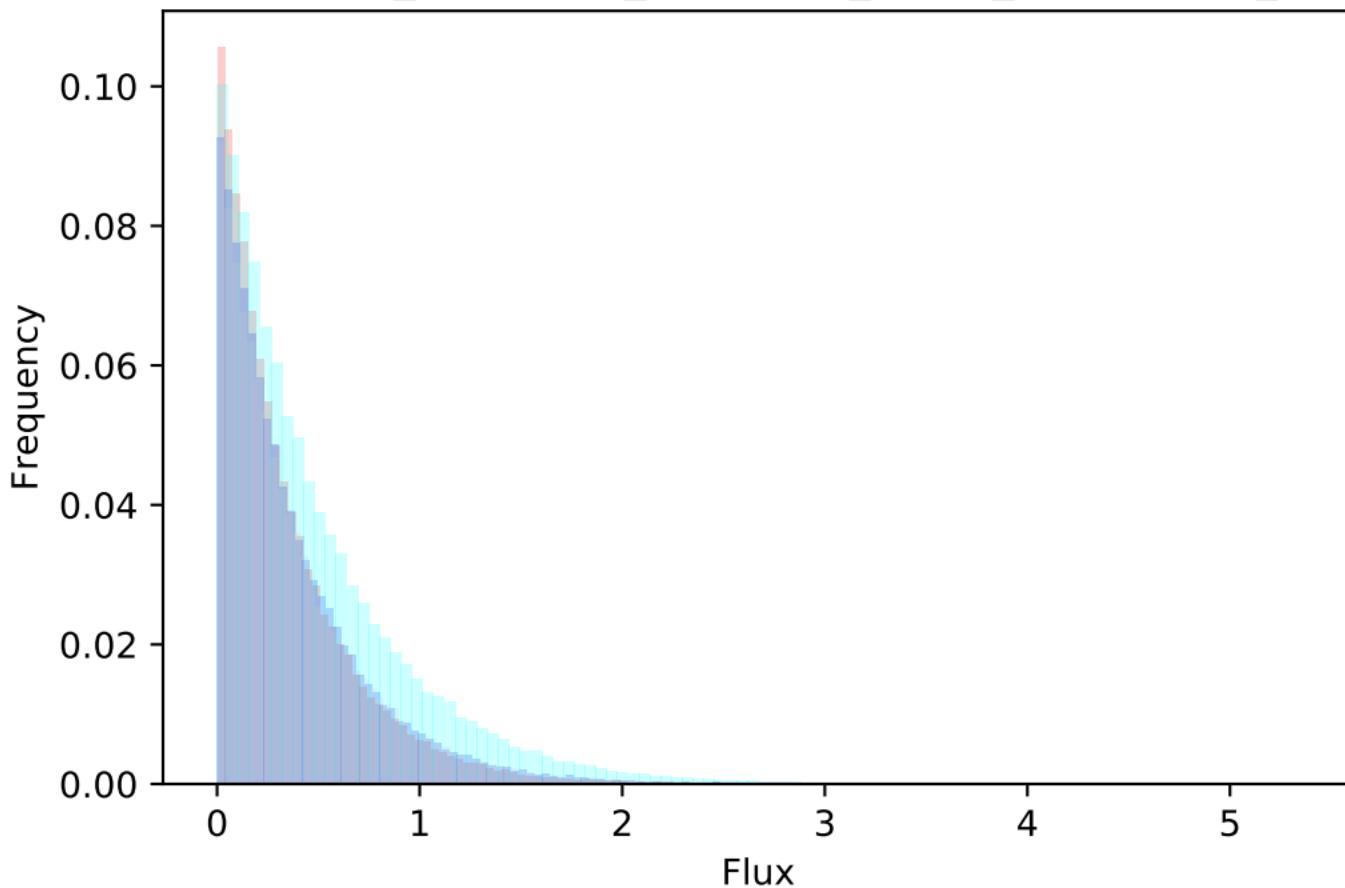


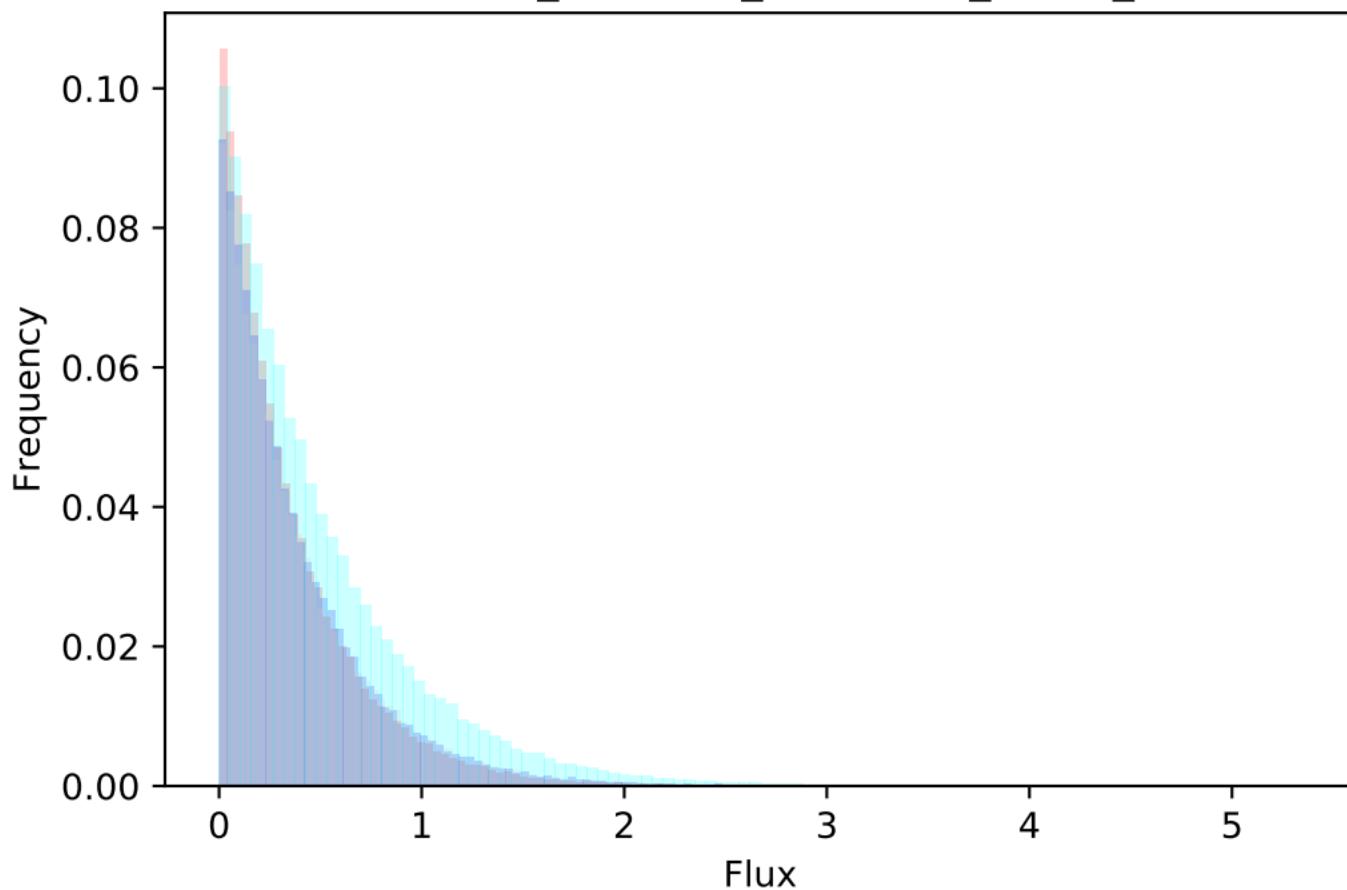
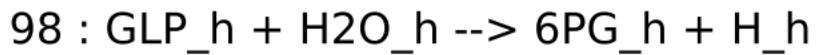
95 : Mal\_p + NAD\_p <=> H\_p + NADH\_p + OAA\_p



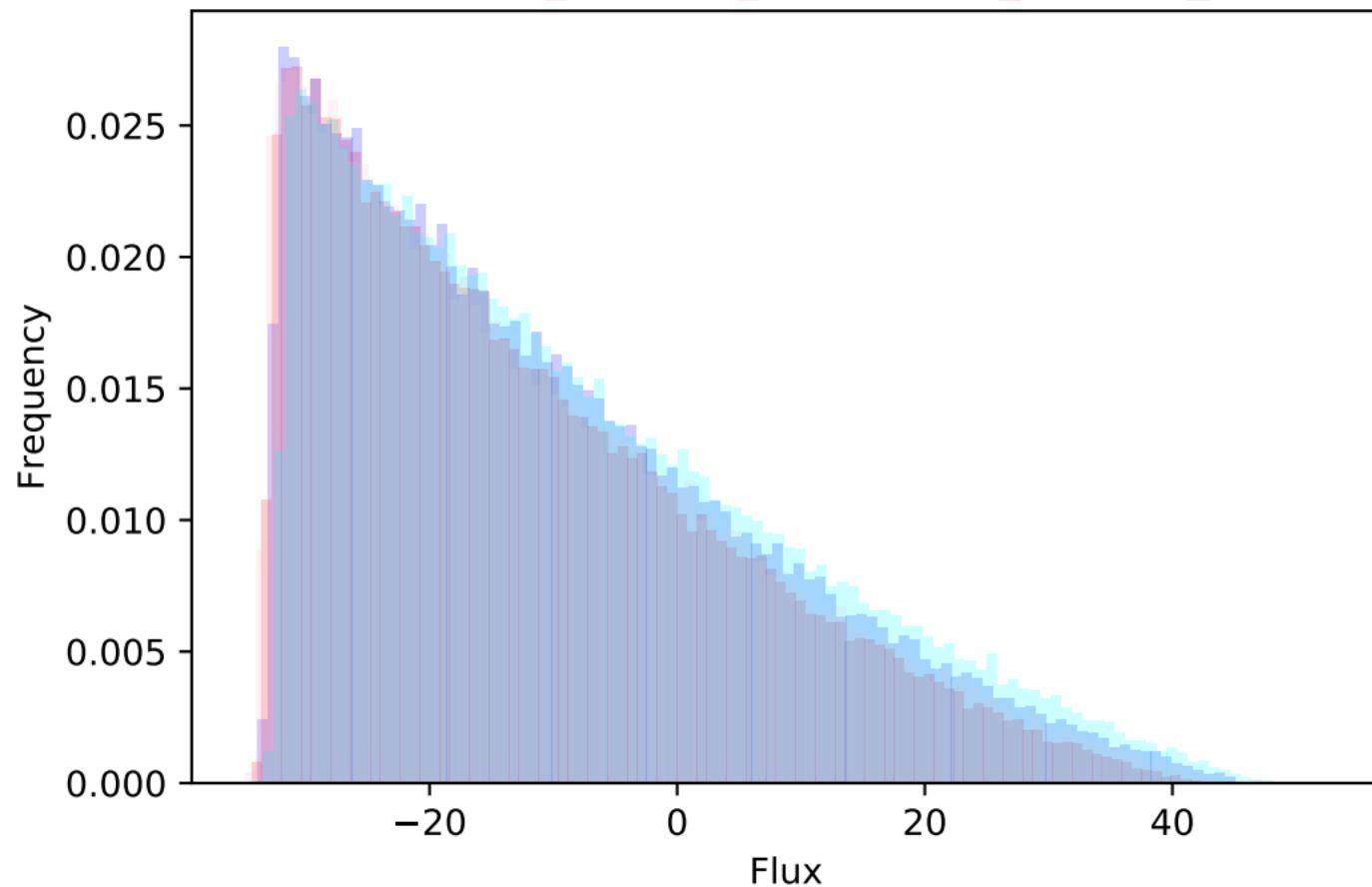


$$97 : \text{G6P\_h} + \text{NADP\_h} \rightarrow \text{GLP\_h} + \text{H\_h} + \text{NADPH\_h}$$

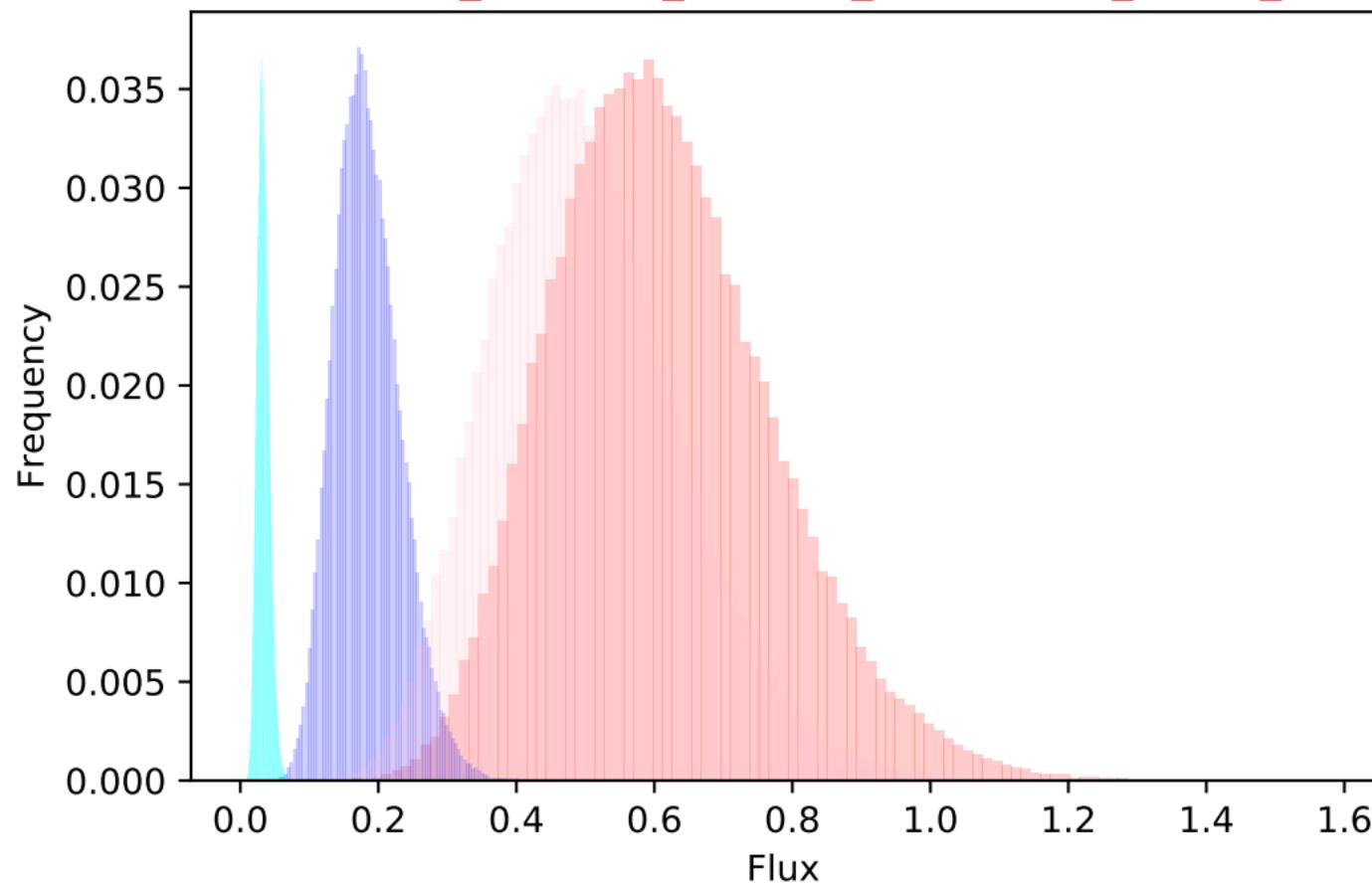




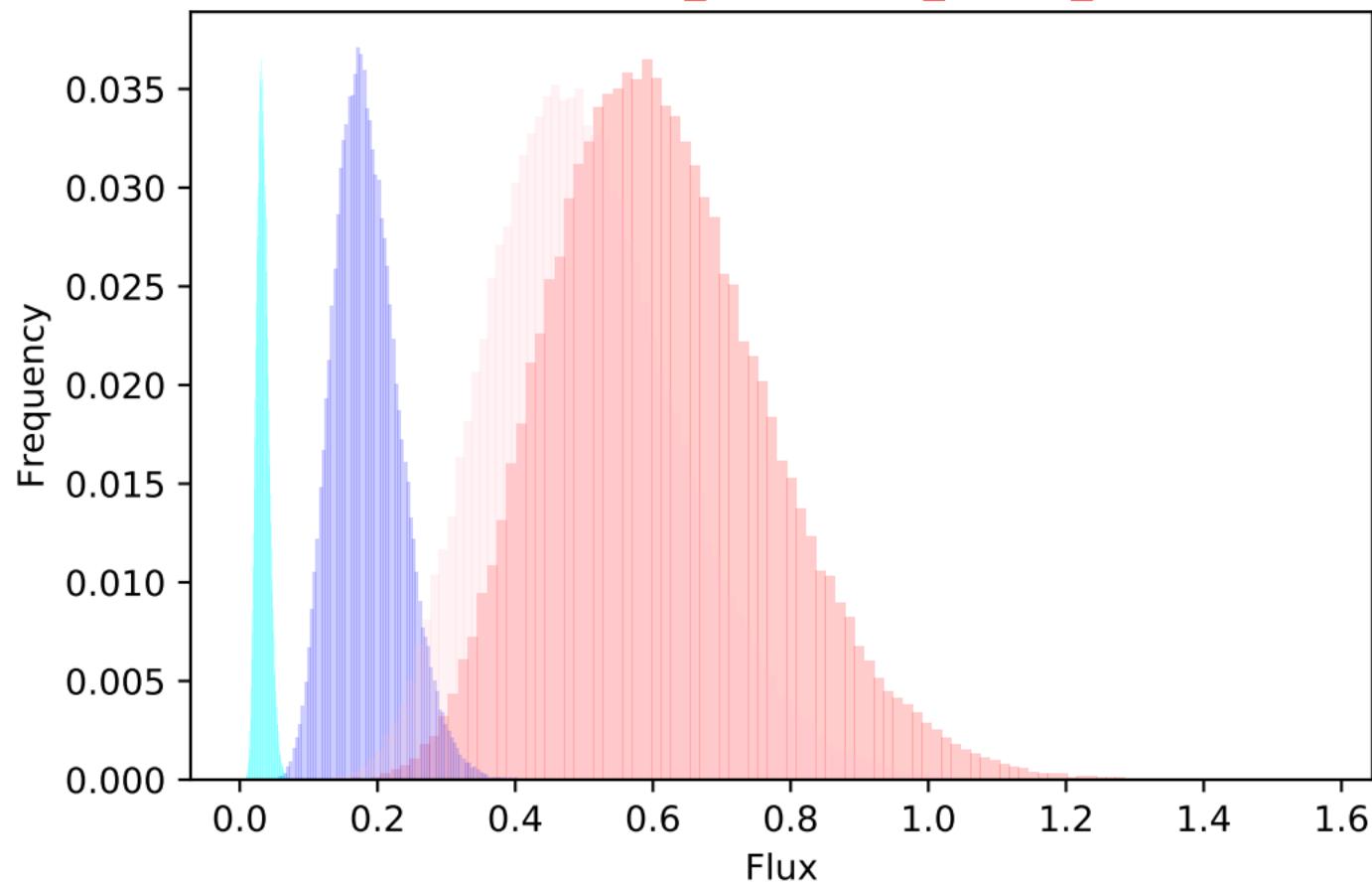
101 : GAP\_h + S7P\_h <=> E4P\_h + F6P\_h



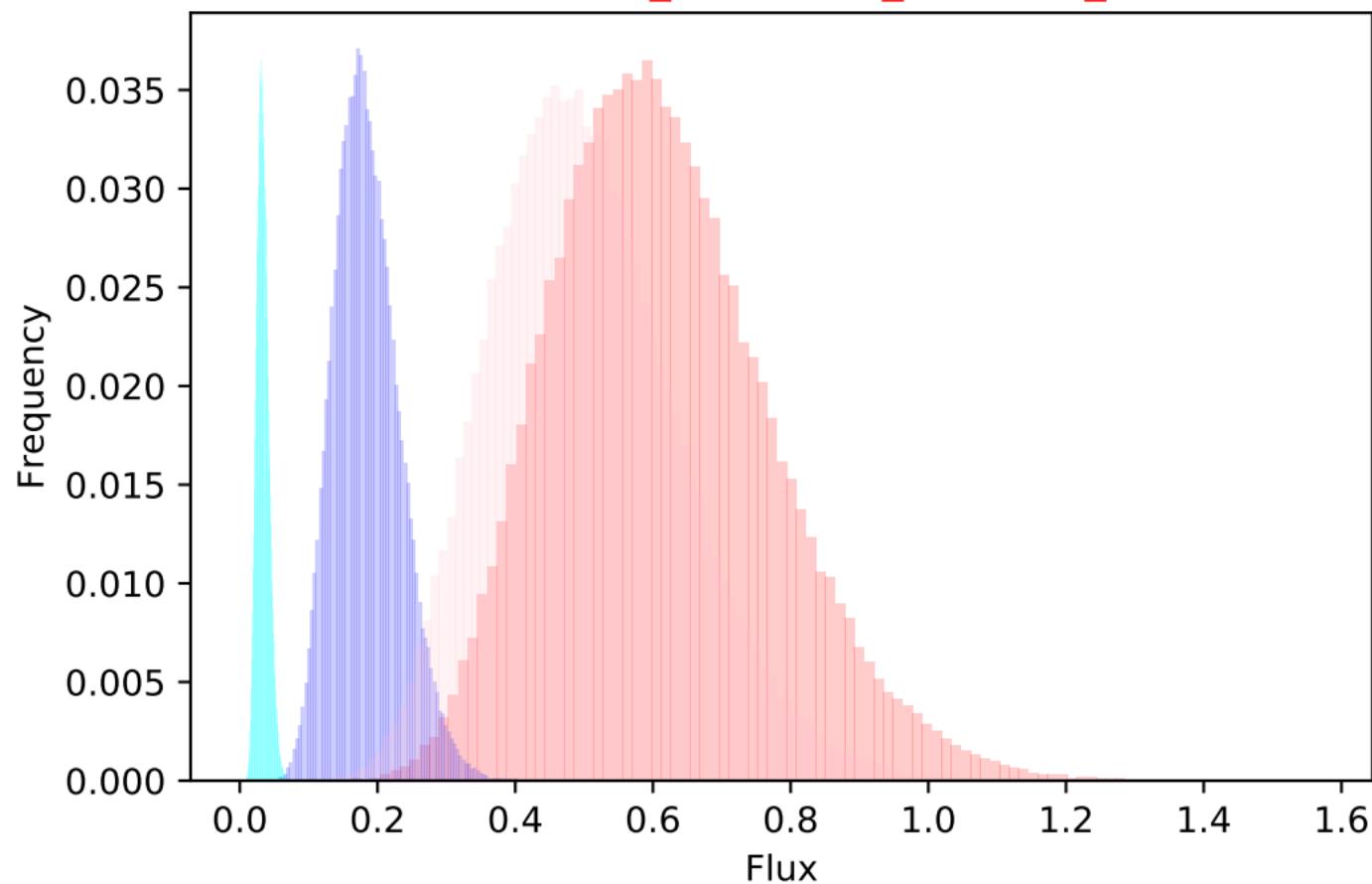
102 : E4P\_h + H2O\_h + PEP\_h --> DAHP\_h + Pi\_h



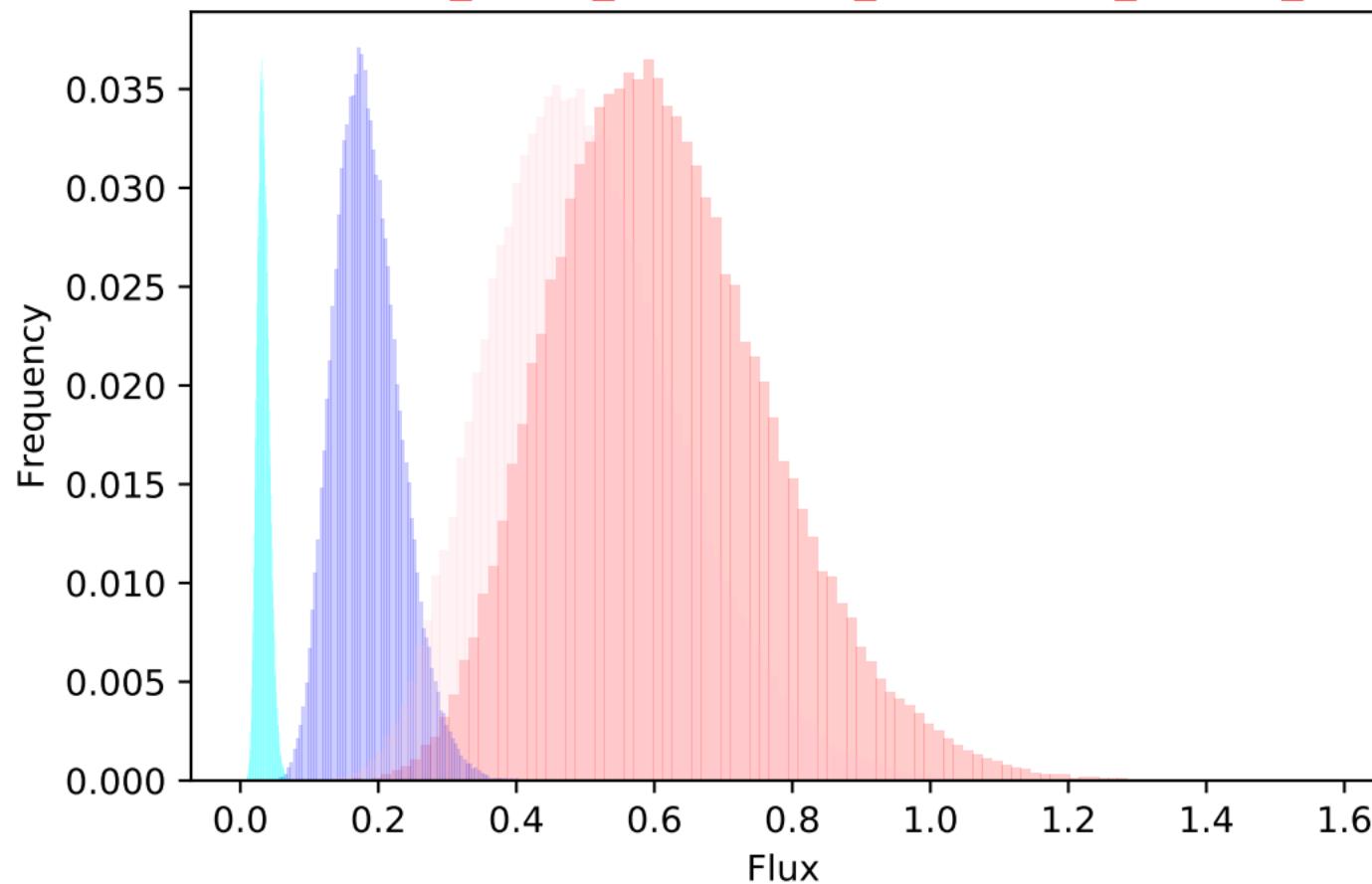
103 : DAHP<sub>h</sub> --> DHQ<sub>h</sub> + Pi<sub>h</sub>

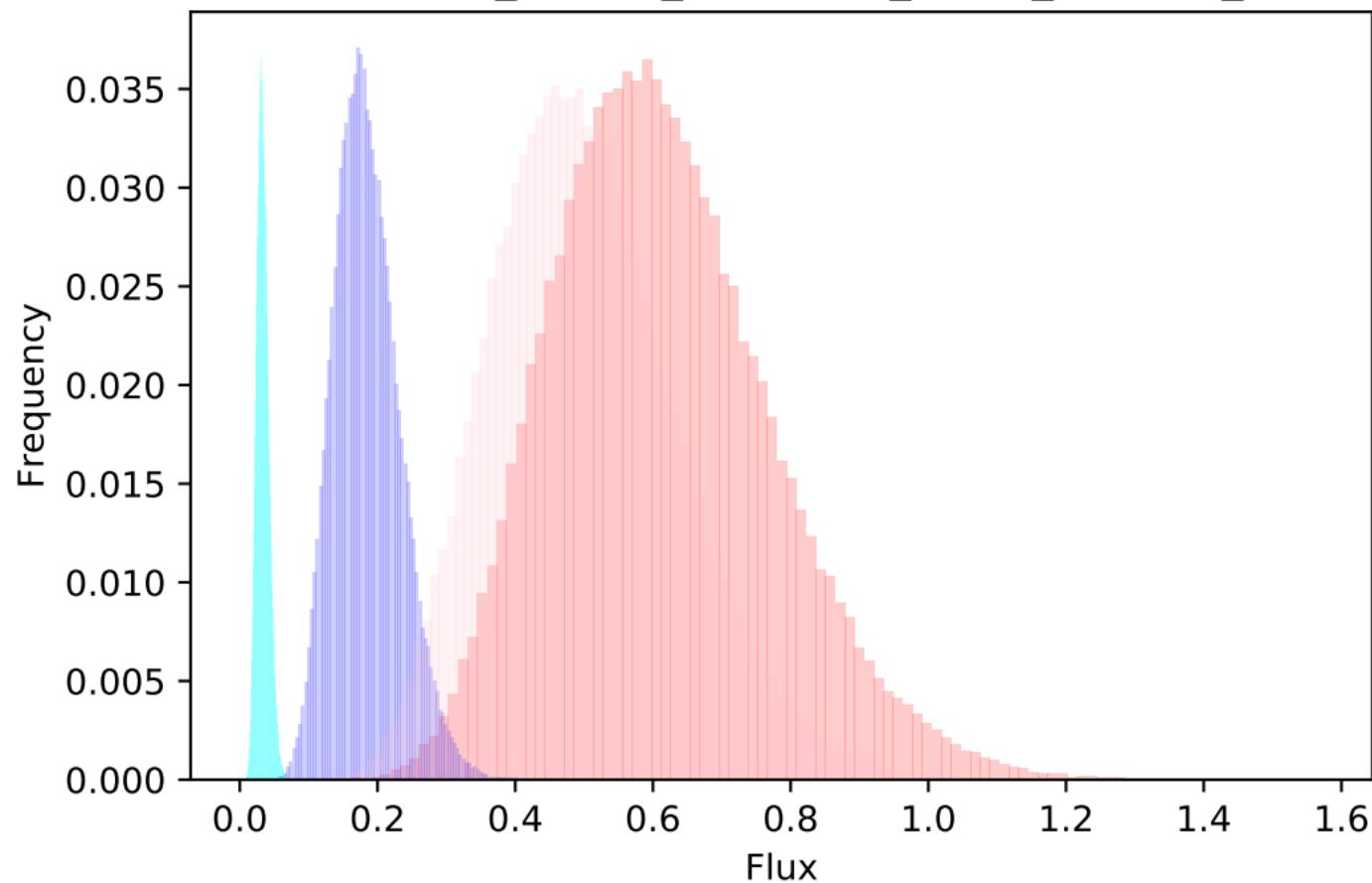
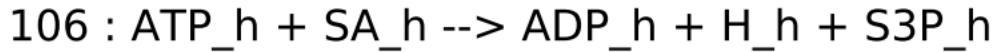


104 : DHQ\_h --> DHS\_h + H2O\_h

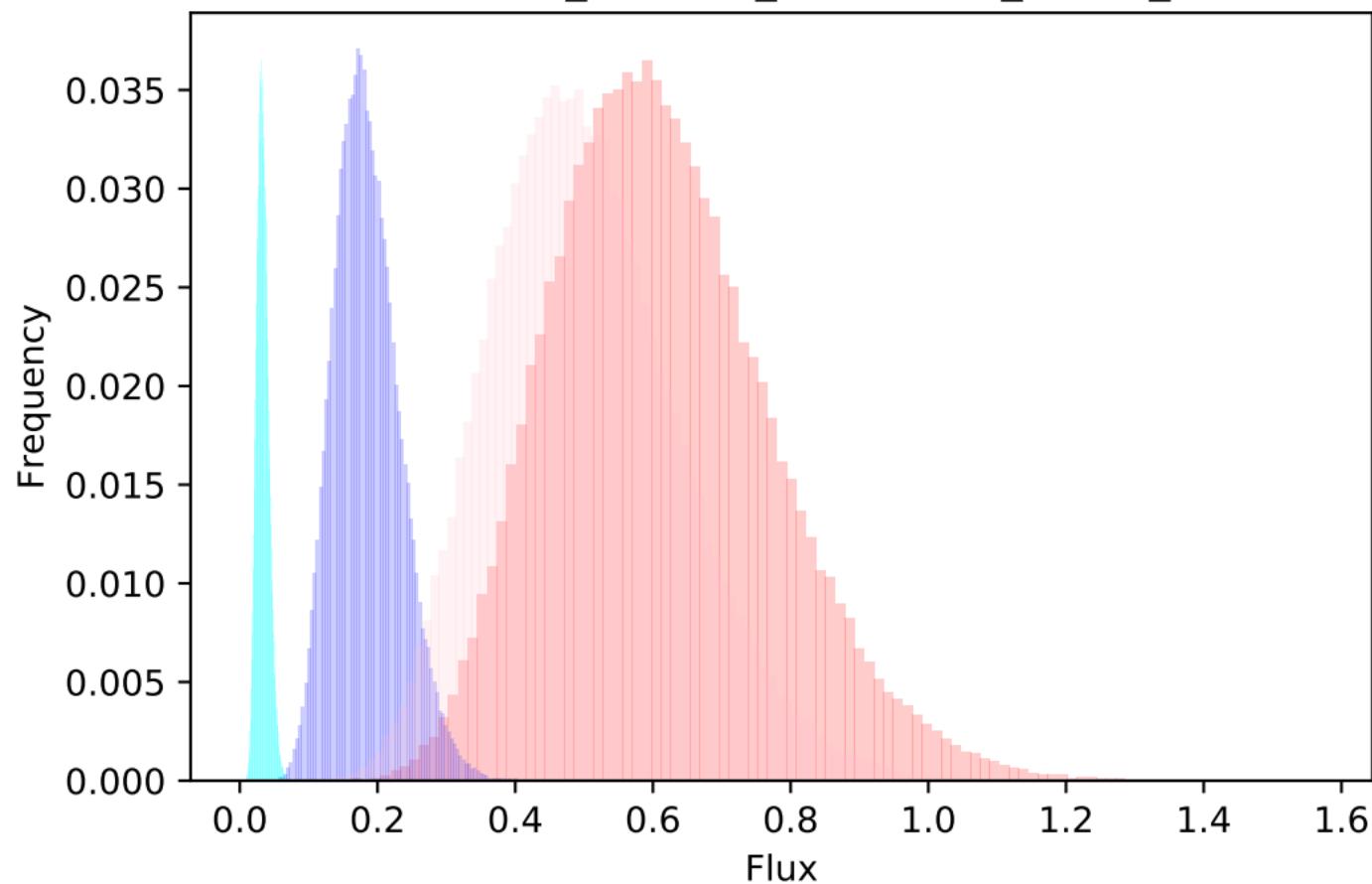


105 : DHS\_h + H\_h + NADPH\_h --> NADP\_h + SA\_h

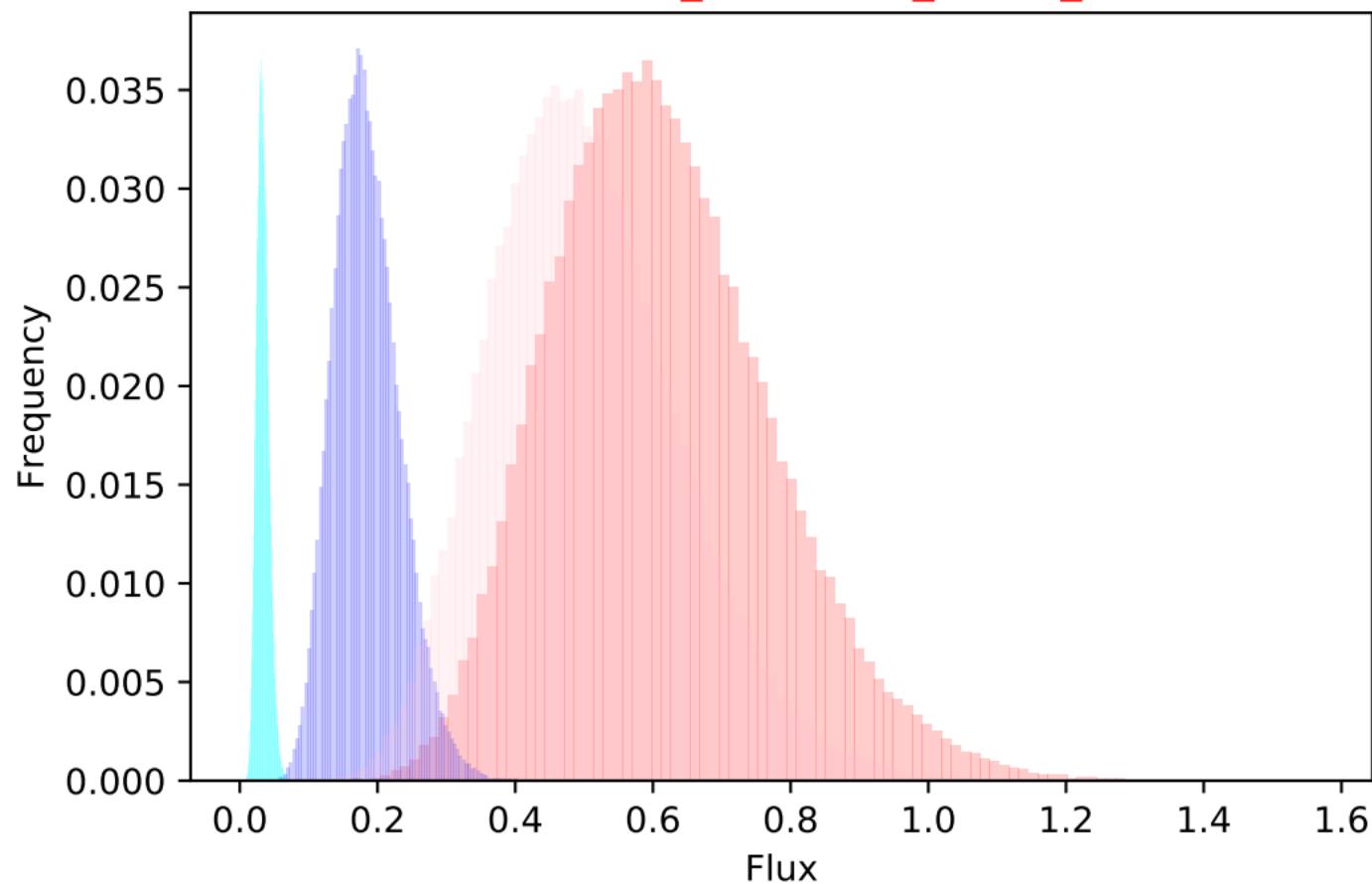


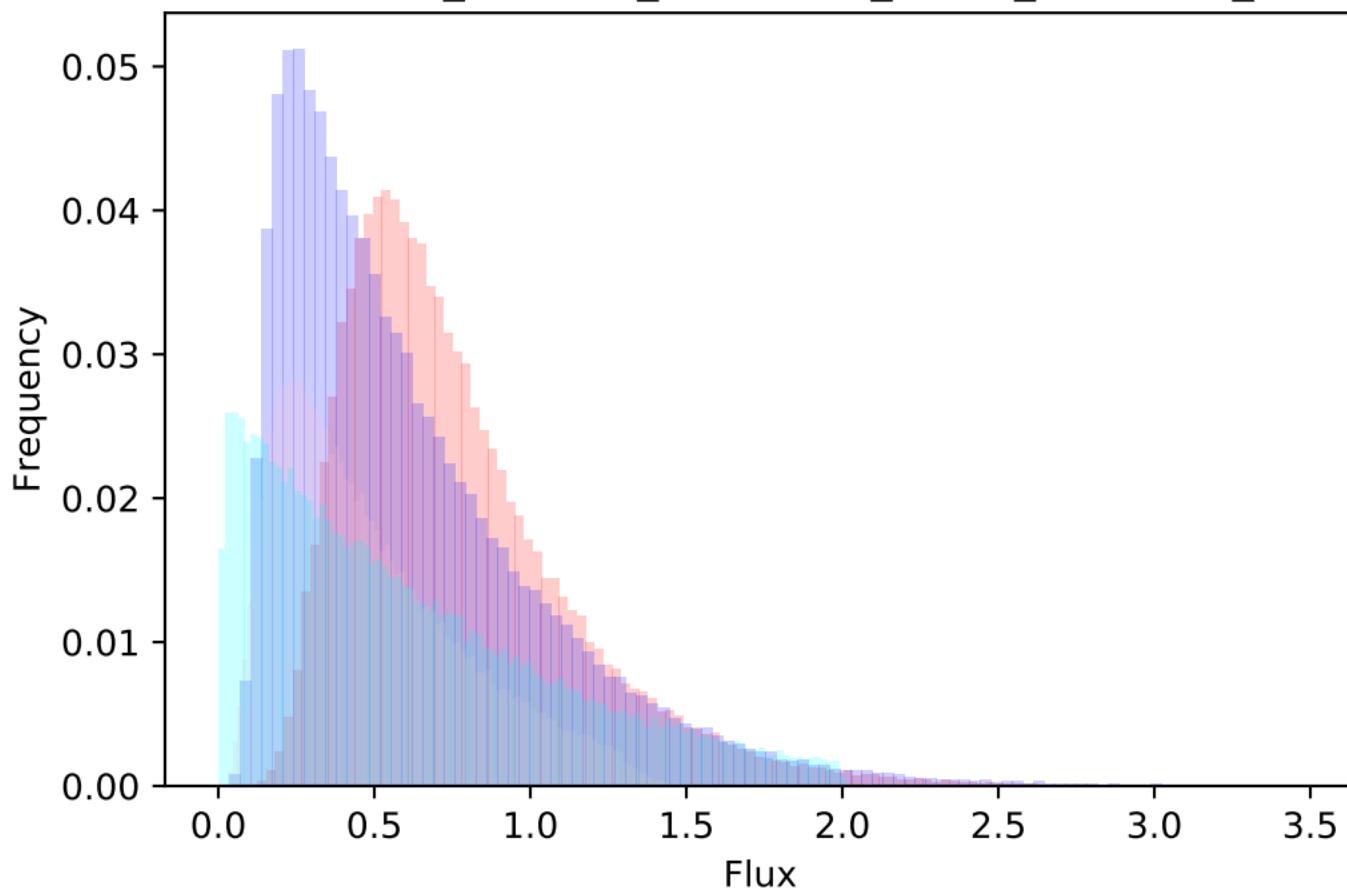


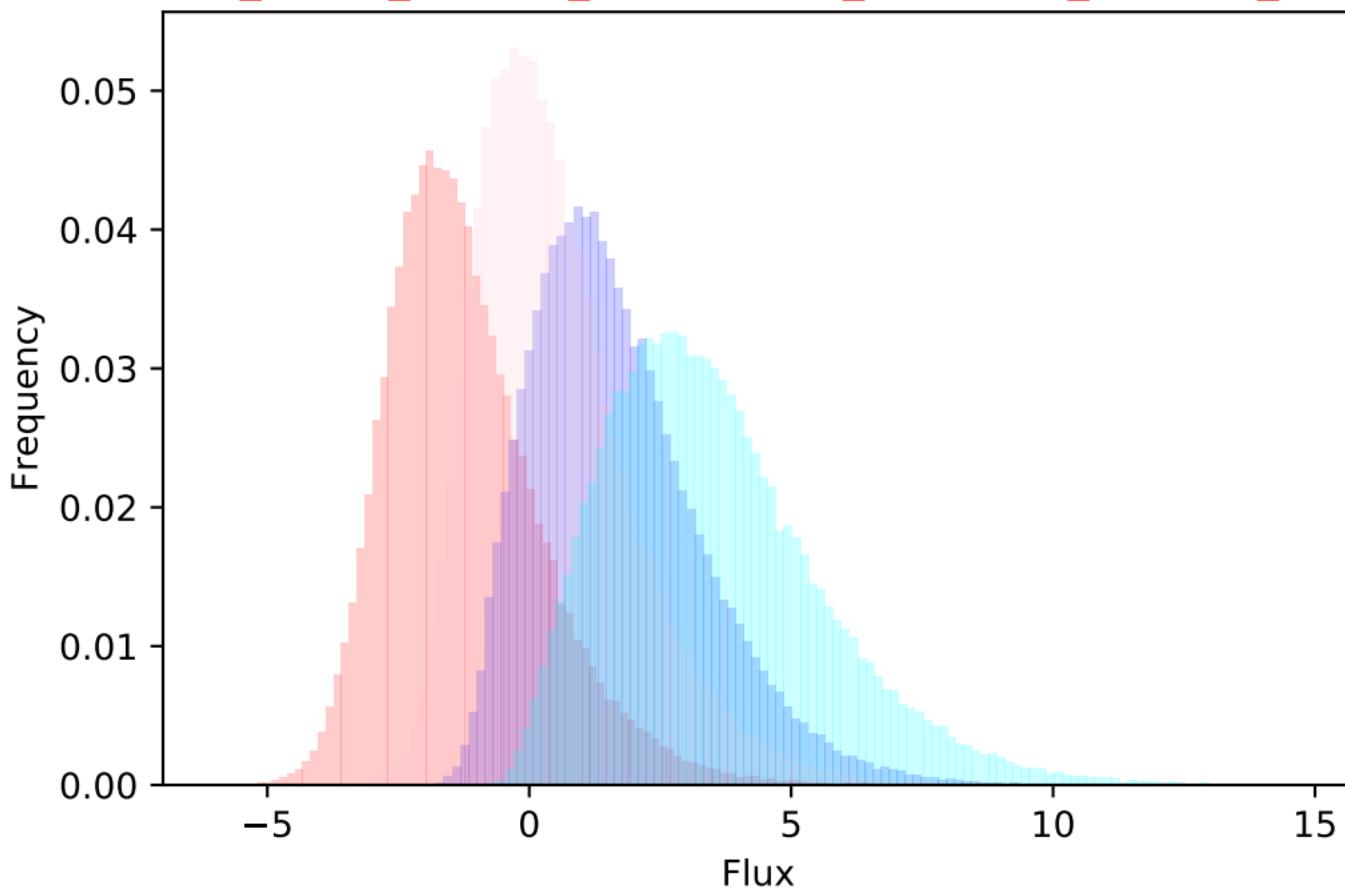
107 : PEP\_h + S3P\_h  $\rightarrow$  EPSP\_h + Pi\_h

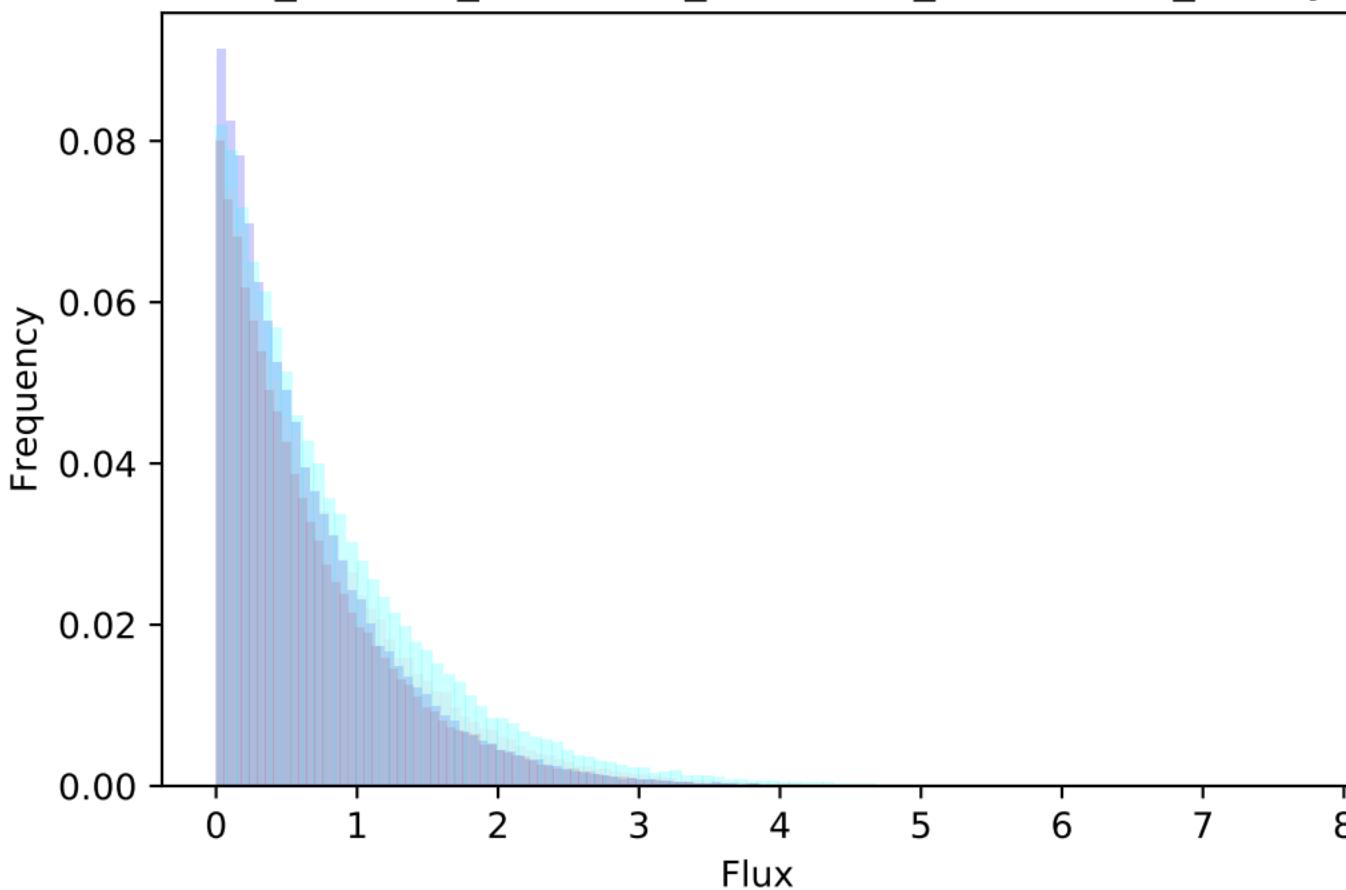
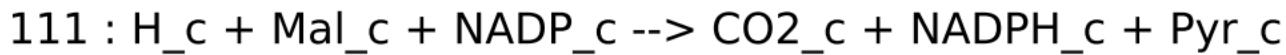


108 : EPSP\_h --> CHR\_h + Pi\_h

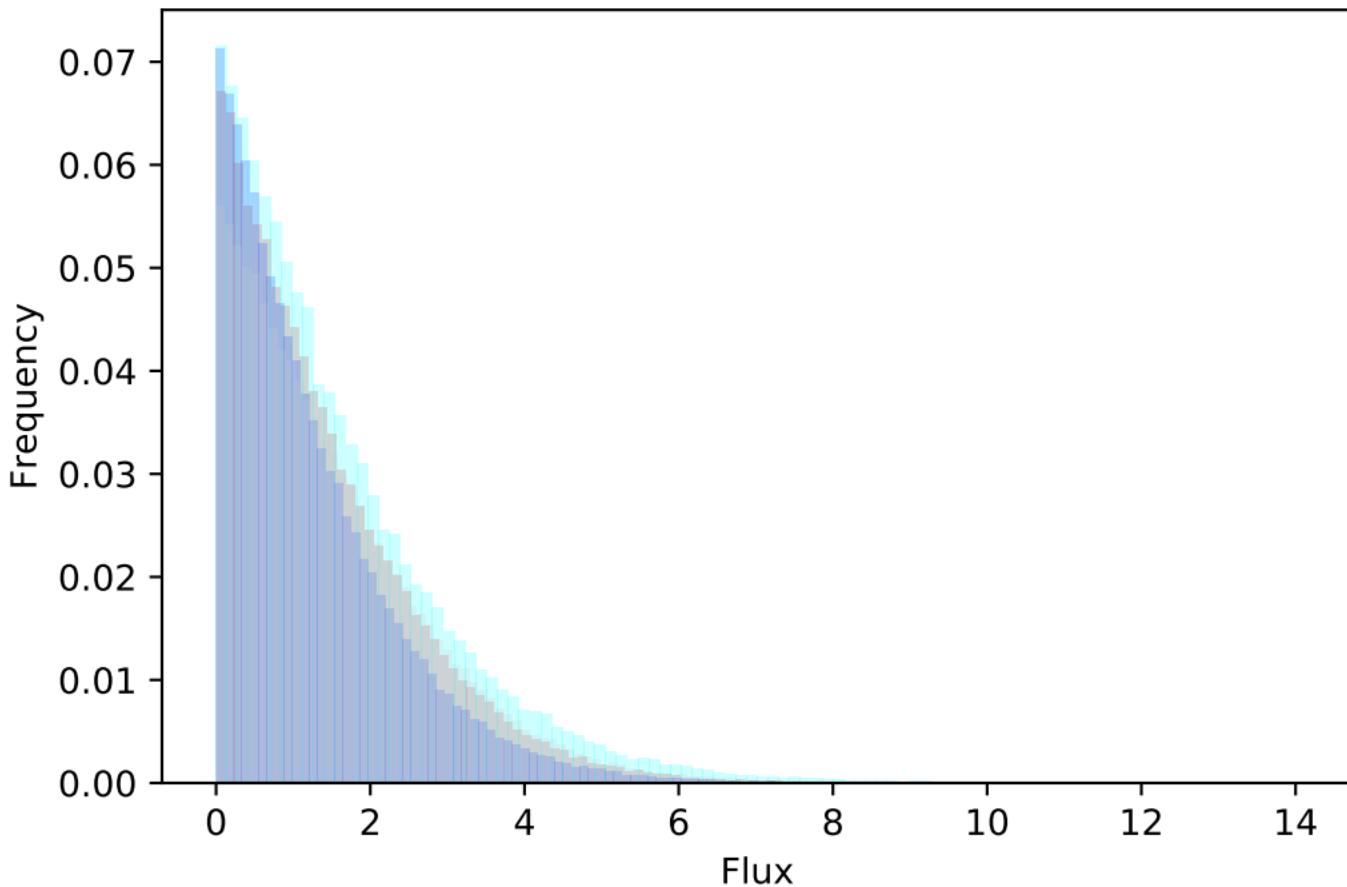




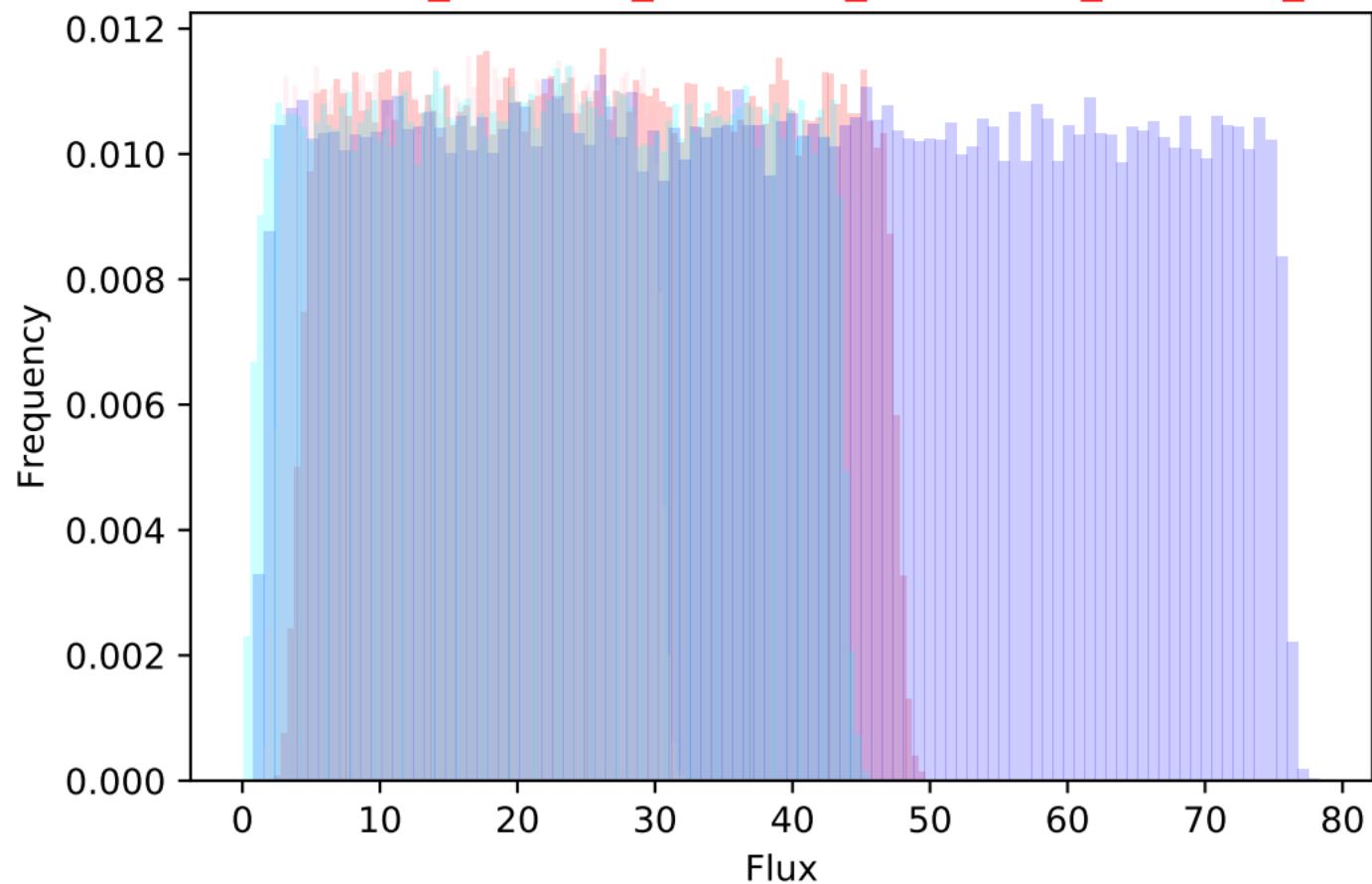




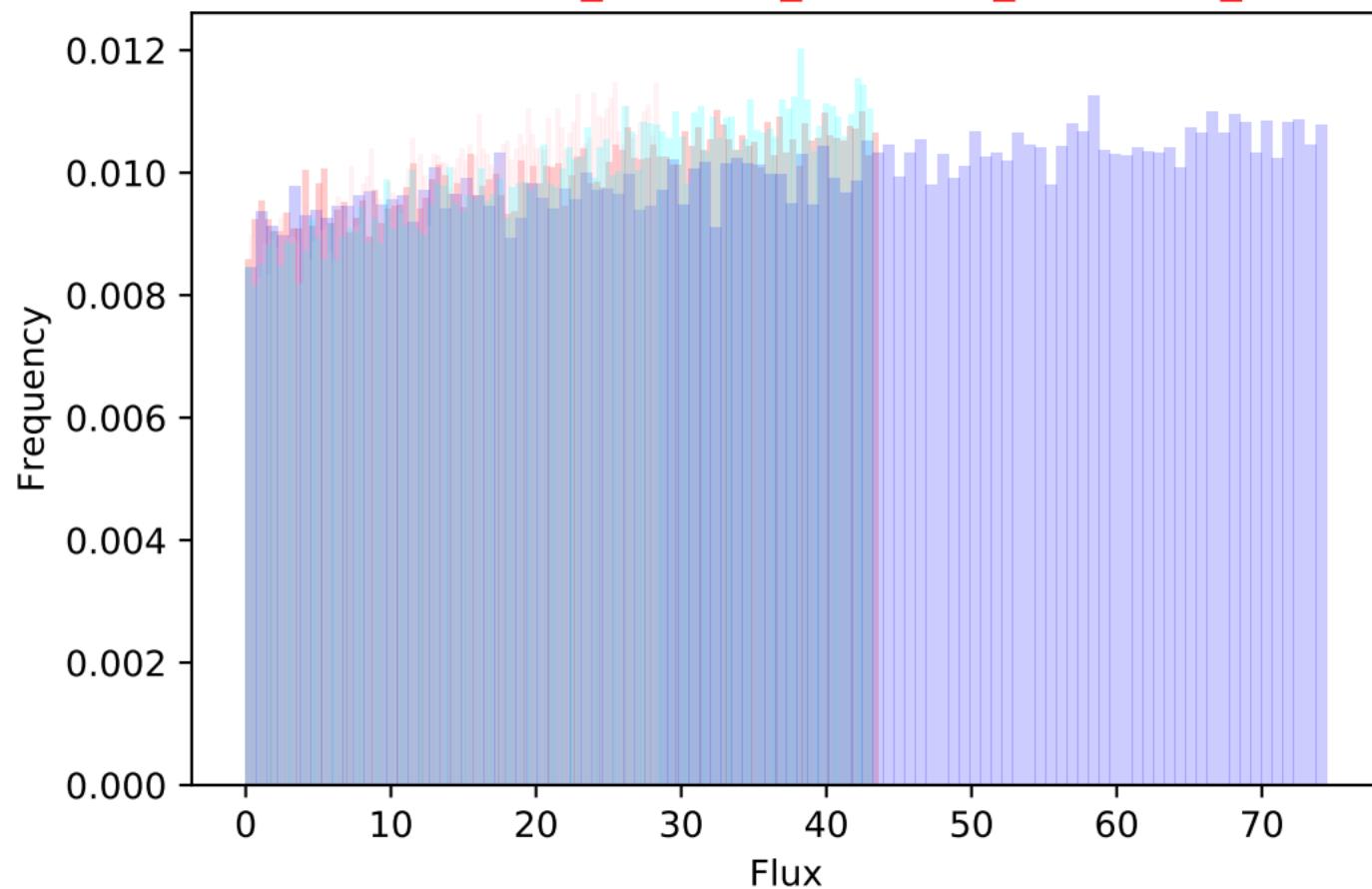
112 : Mal\_h + NADP\_h  $\rightarrow$  CO2\_h + NADPH\_h + Pyr\_h



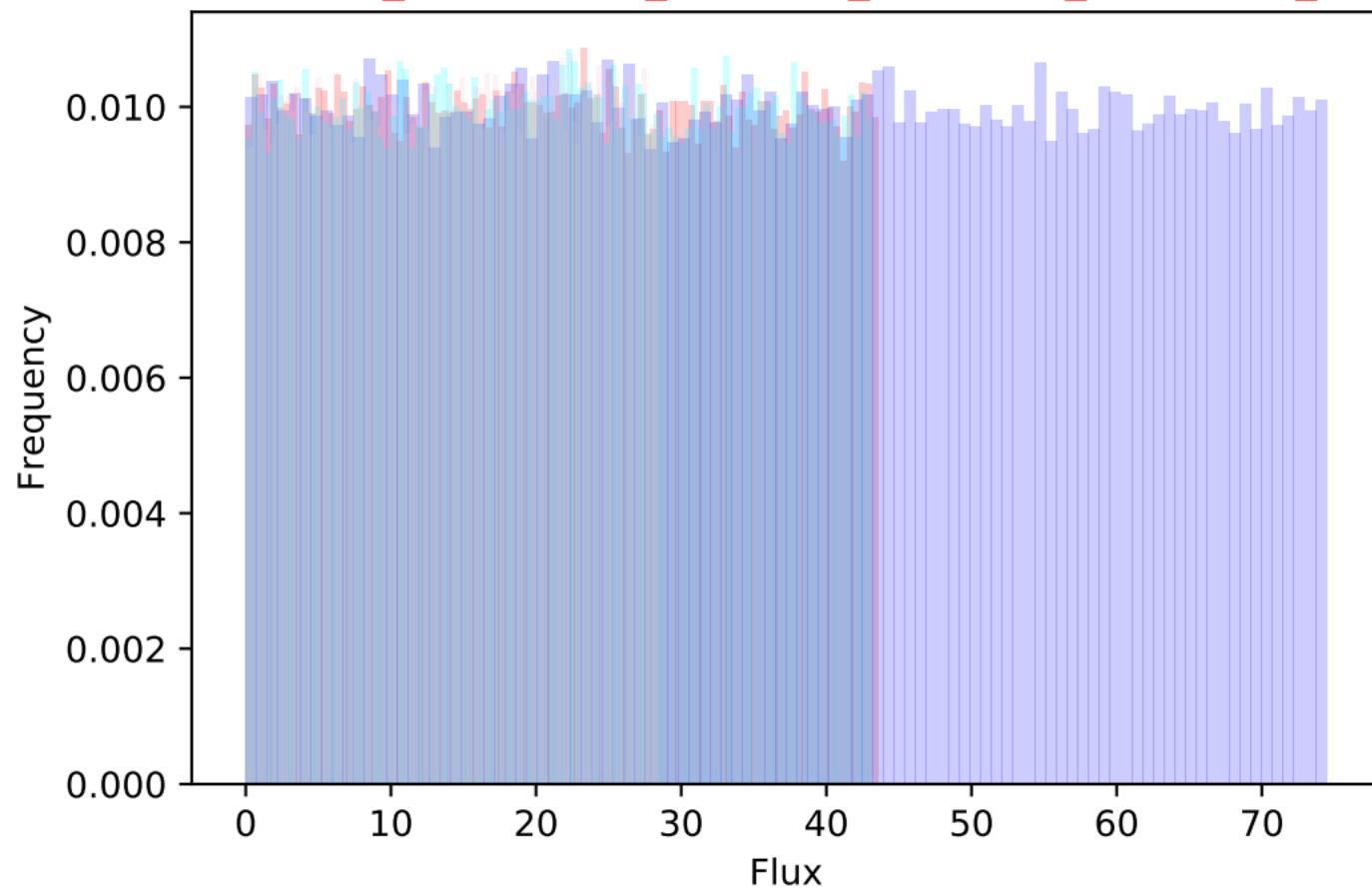
113 : Mal\_h + NAD\_h <=> H\_h + NADH\_h + OAA\_h



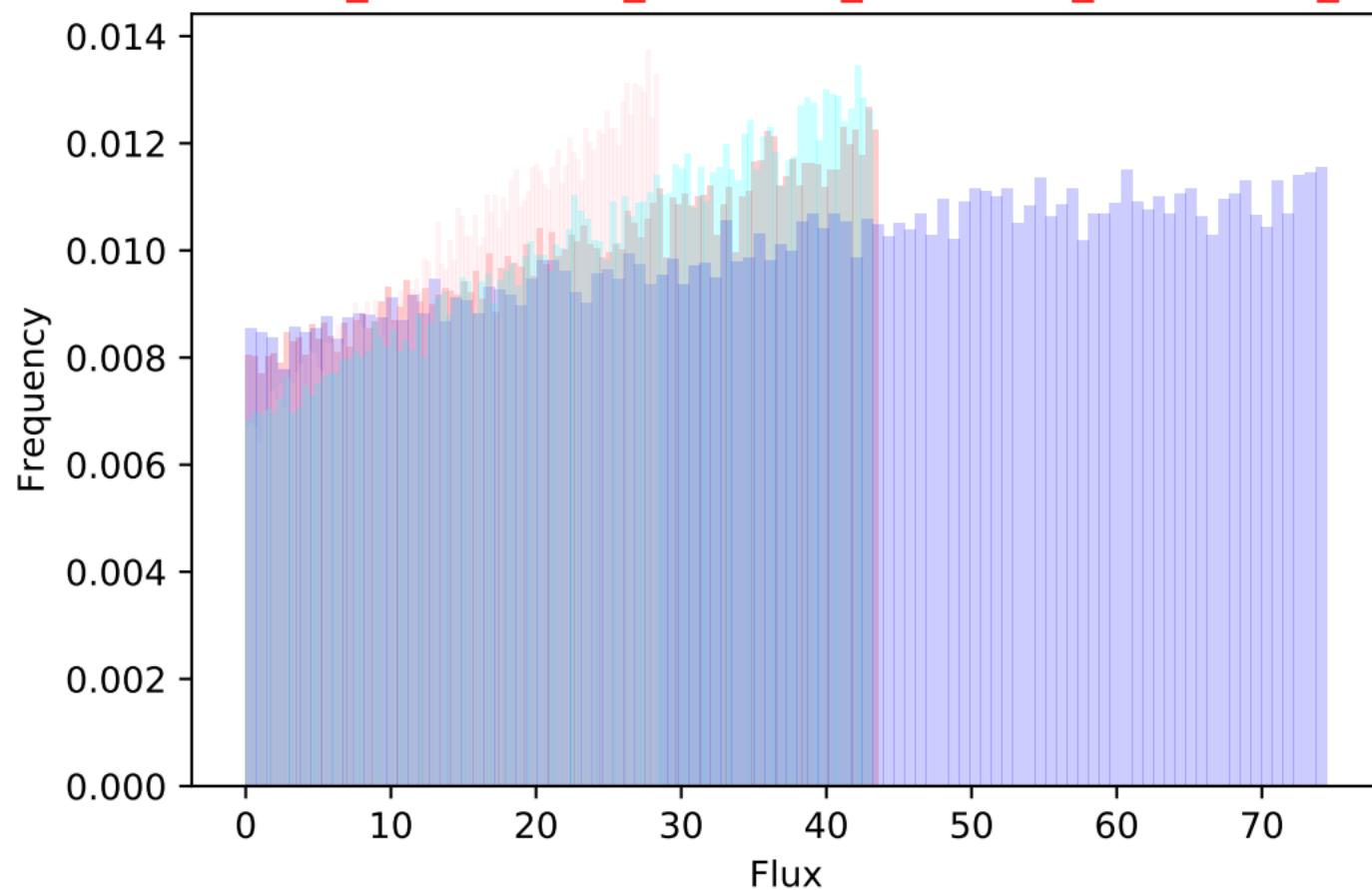
114 : NADPH\_c + OAA\_c --> Mal\_c + NADP\_c



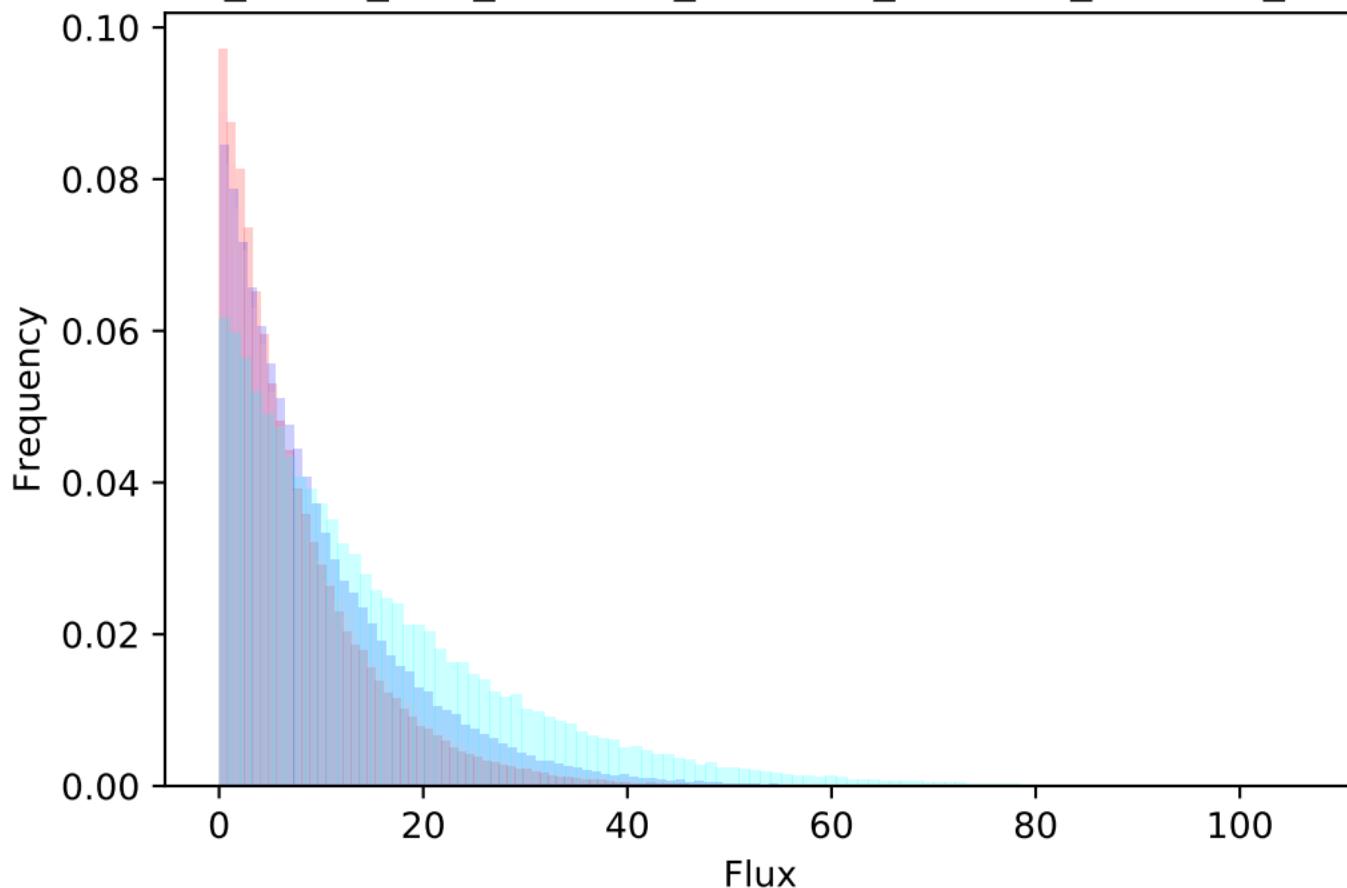
115 : H\_h + NADPH\_h + OAA\_h --> Mal\_h + NADP\_h



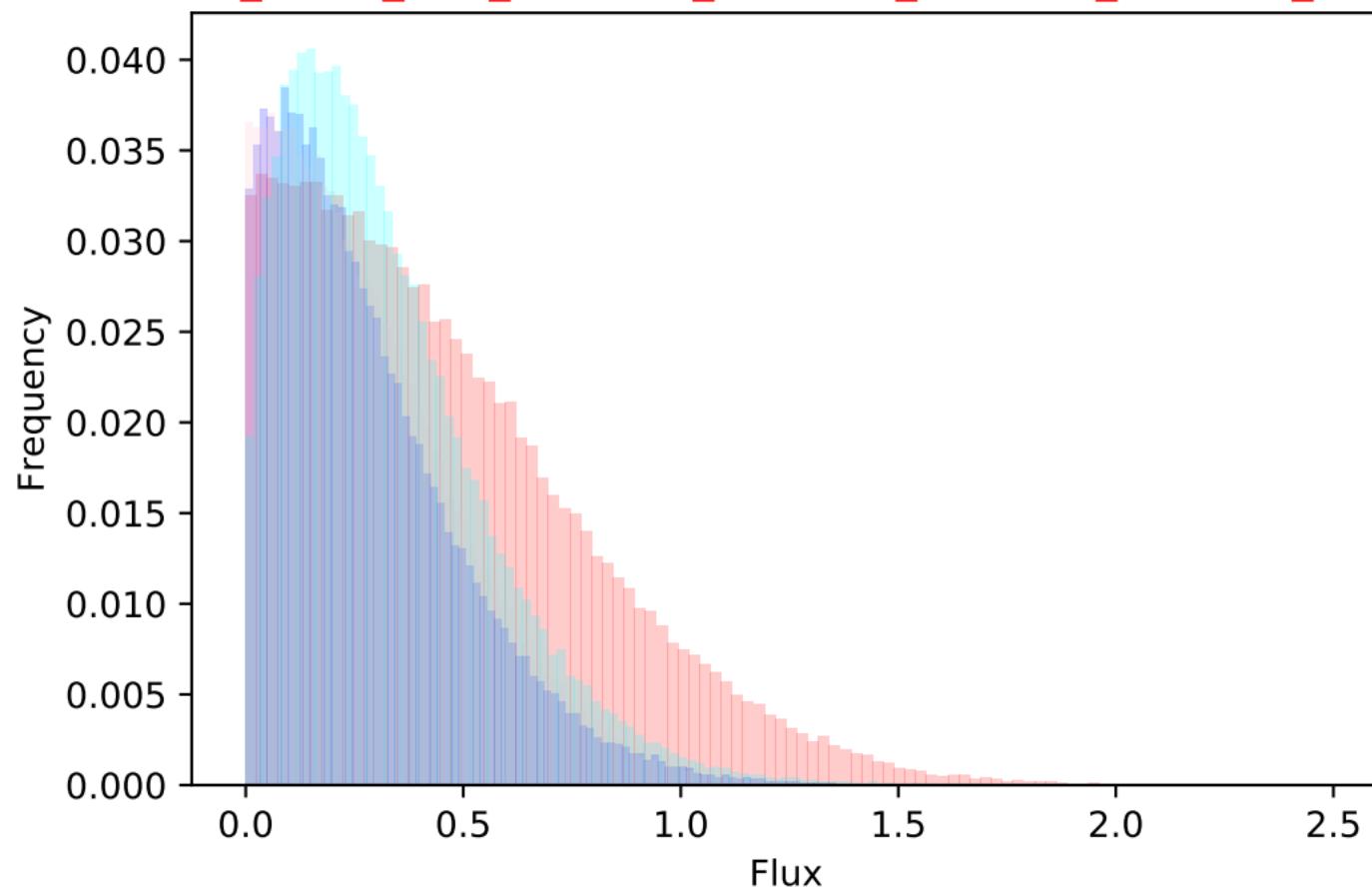
116 : H\_m + NADPH\_m + OAA\_m --> Mal\_m + NADP\_m



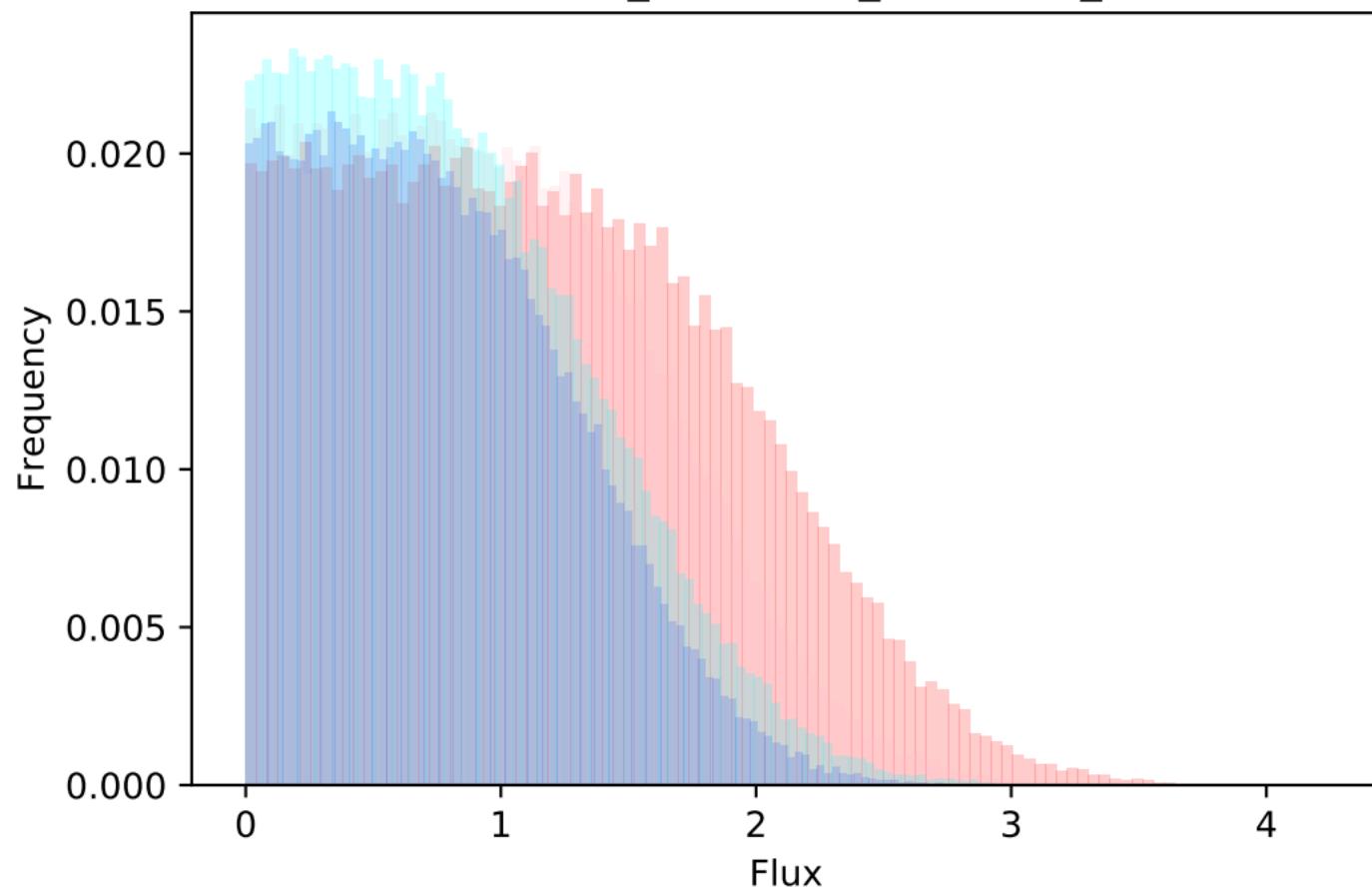
117 : A\_DASH\_CoA\_c + H2O\_c + OAA\_c --> Cit\_c + CoA\_c + H\_c



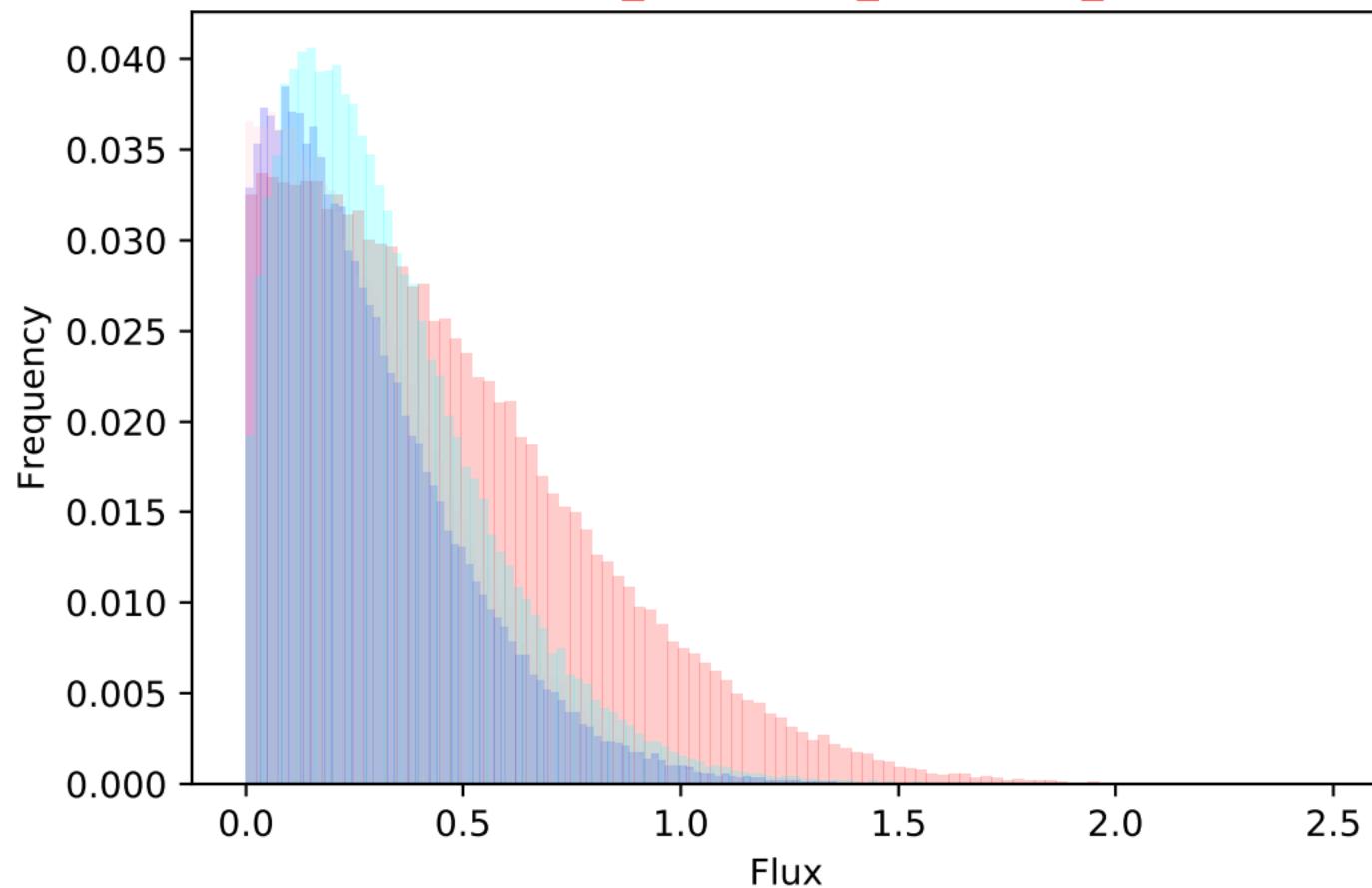
118 : A\_DASH\_CoA\_h + H2O\_h + OAA\_h --> Cit\_h + CoA\_h + H\_h



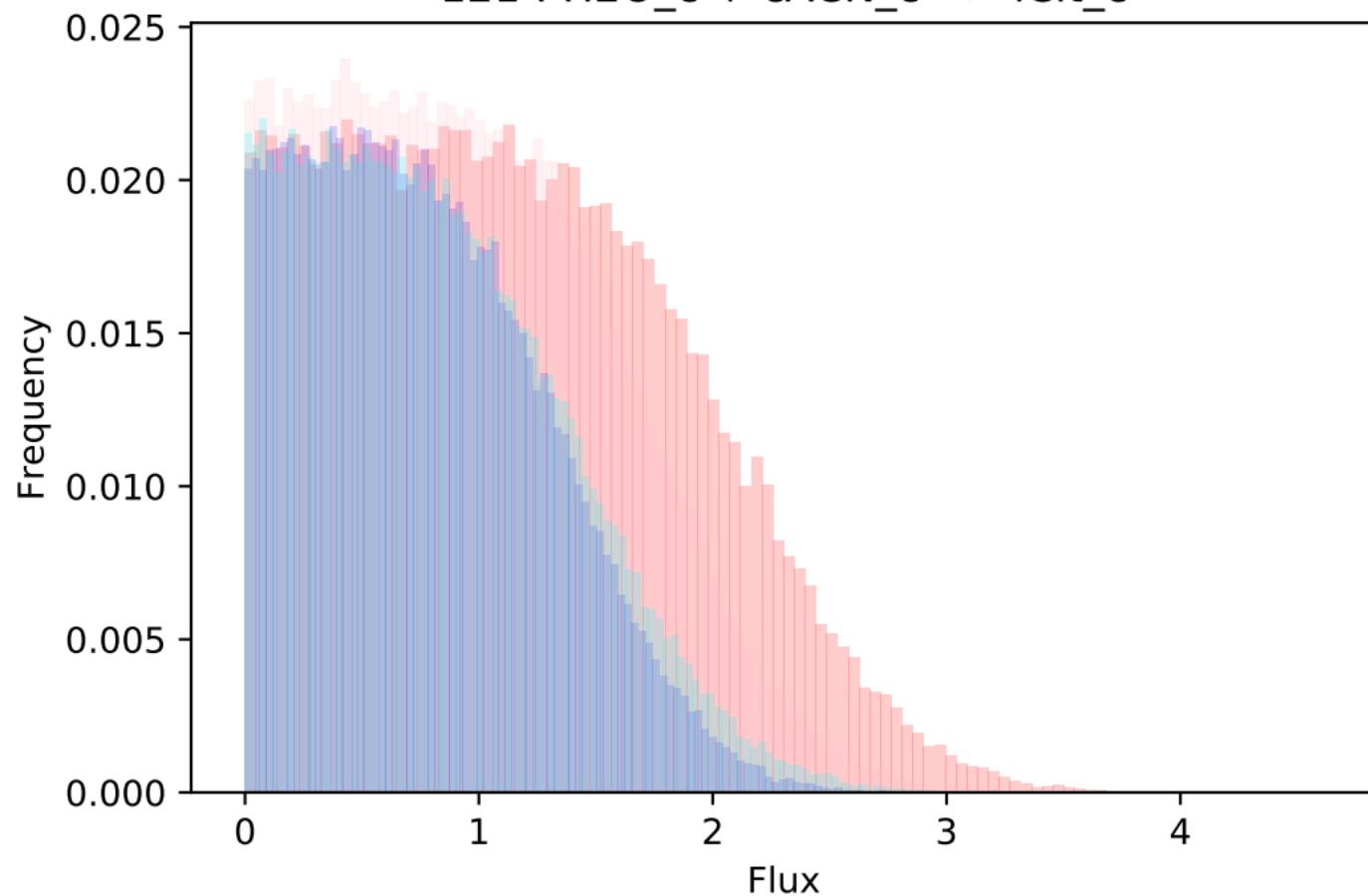
119 : Cit\_c --> H2O\_c + cACN\_c



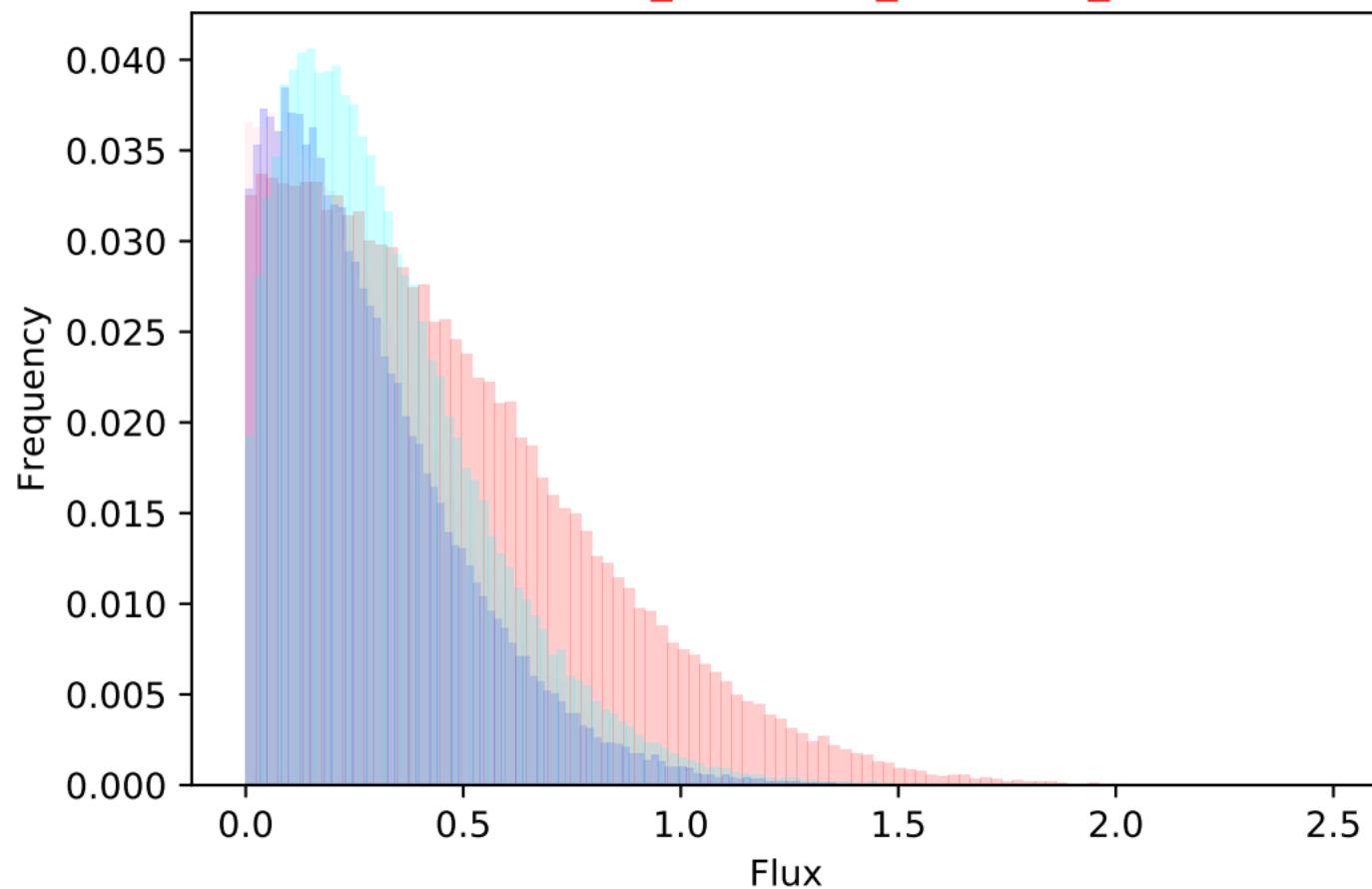
120 : Cit\_h --> H2O\_h + cACN\_h

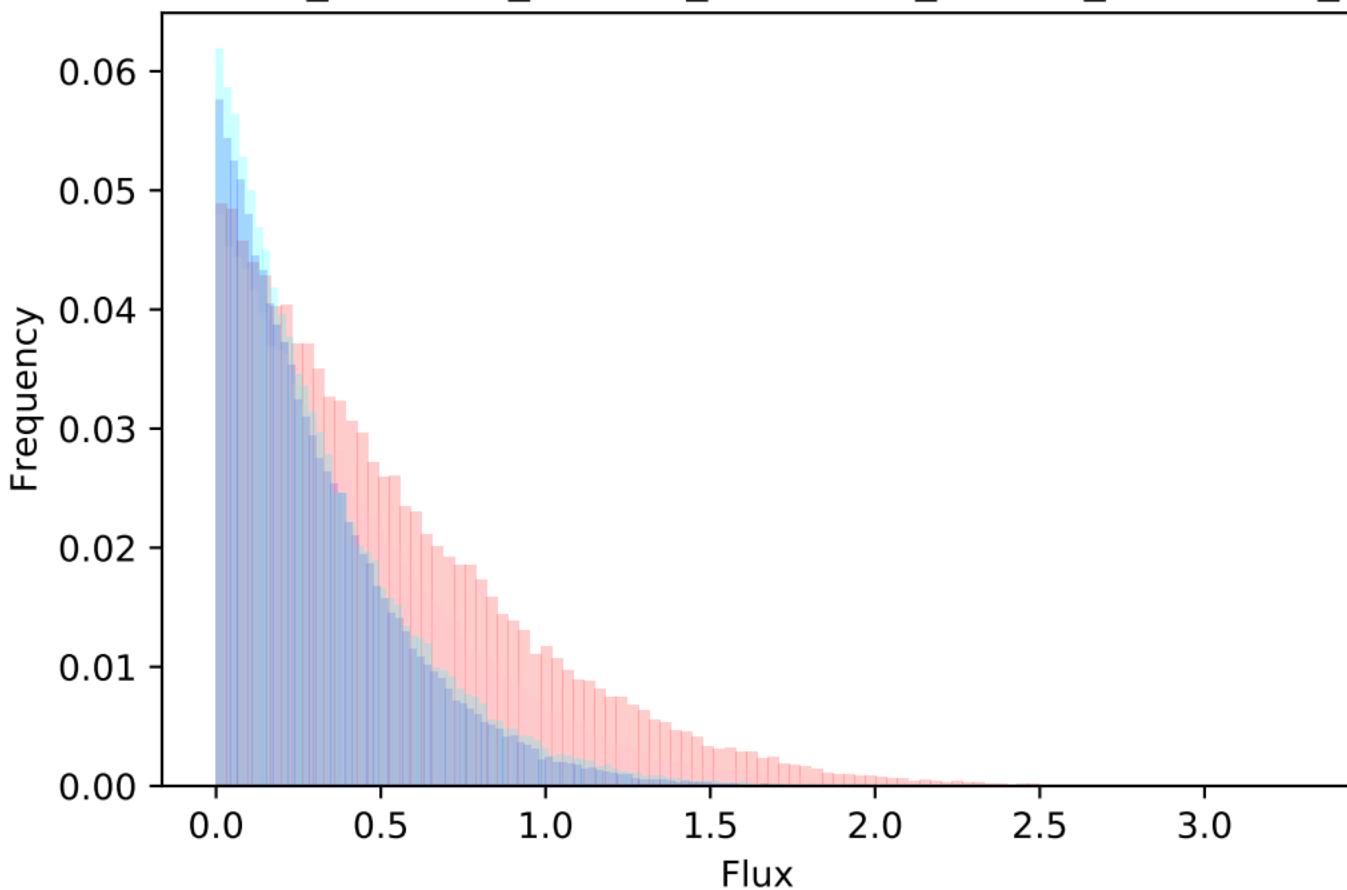
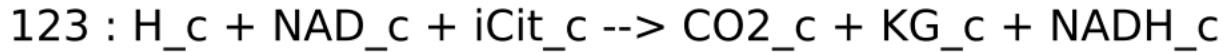


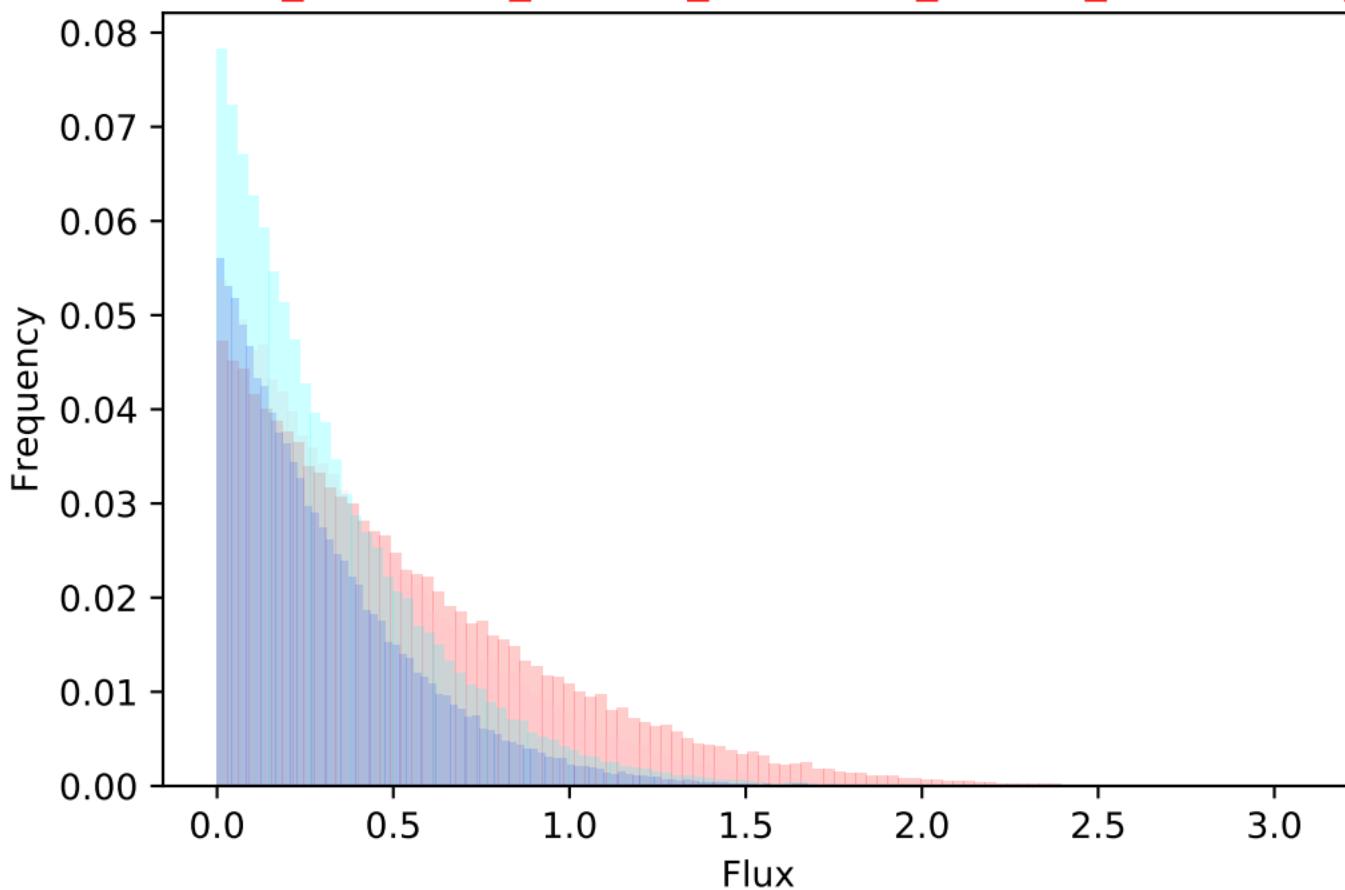
121 : H<sub>2</sub>O\_c + cACN\_c --> iCit\_c



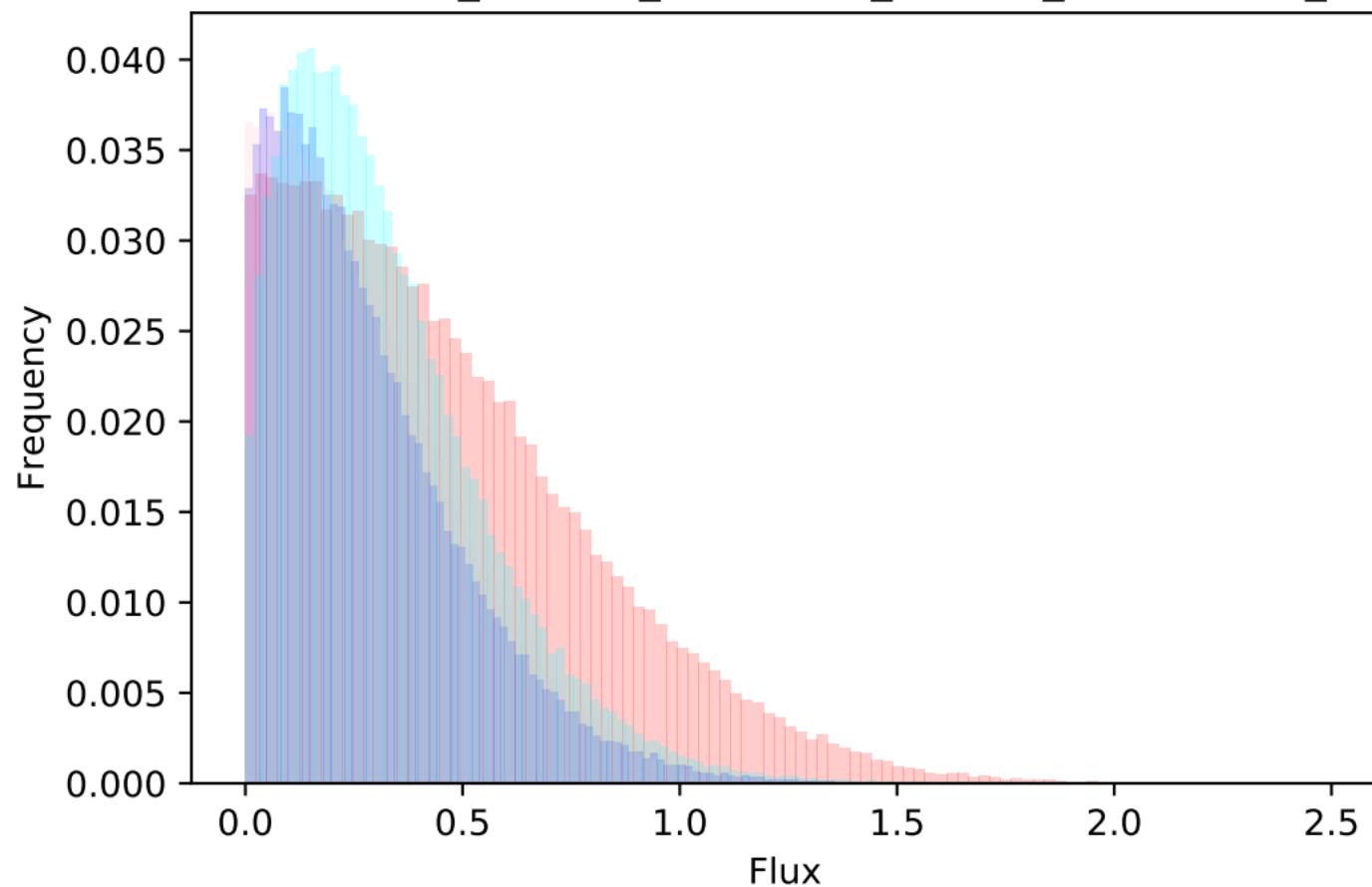
122 : H2O\_h + cACN\_h --> iCit\_h



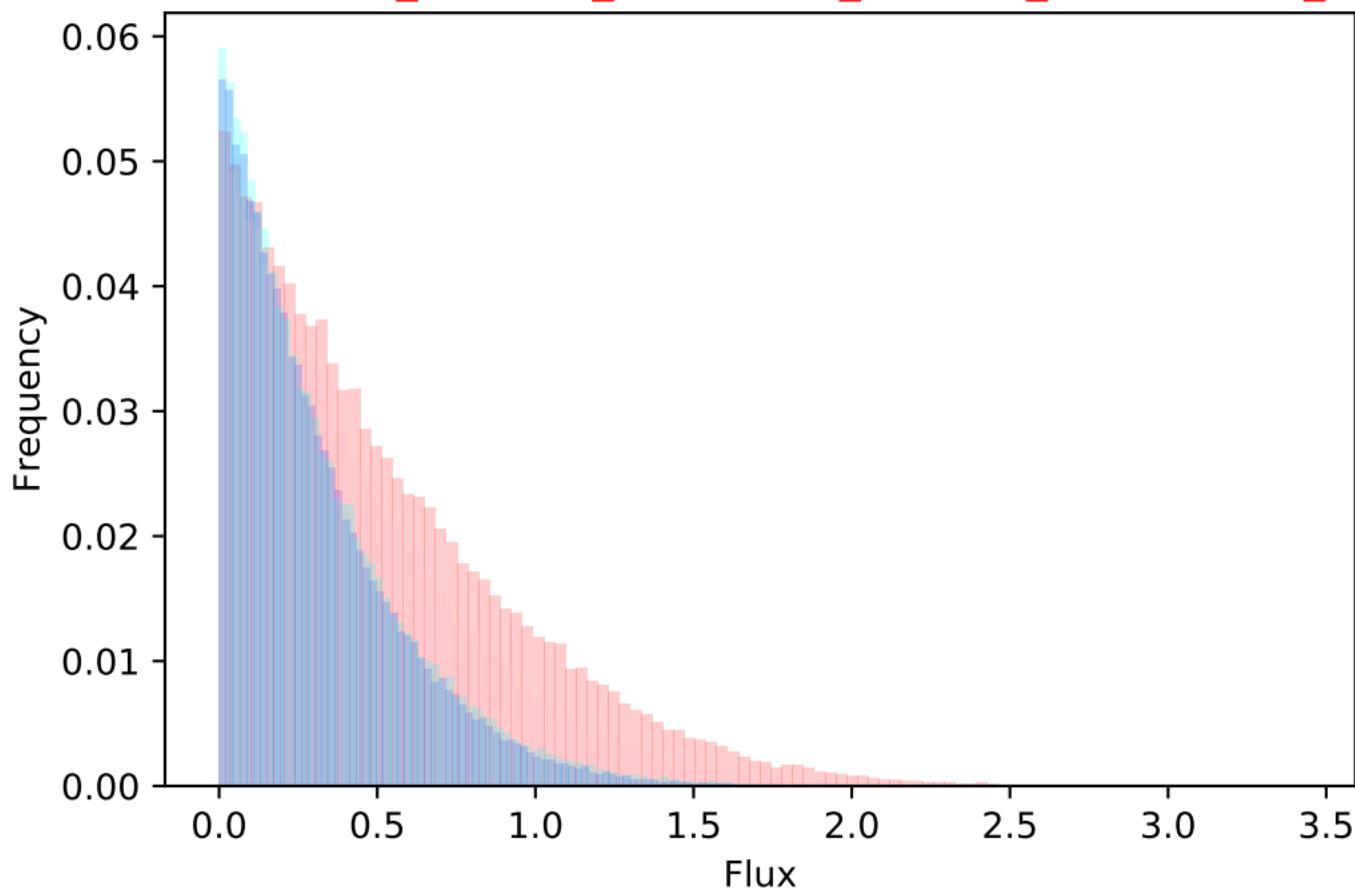




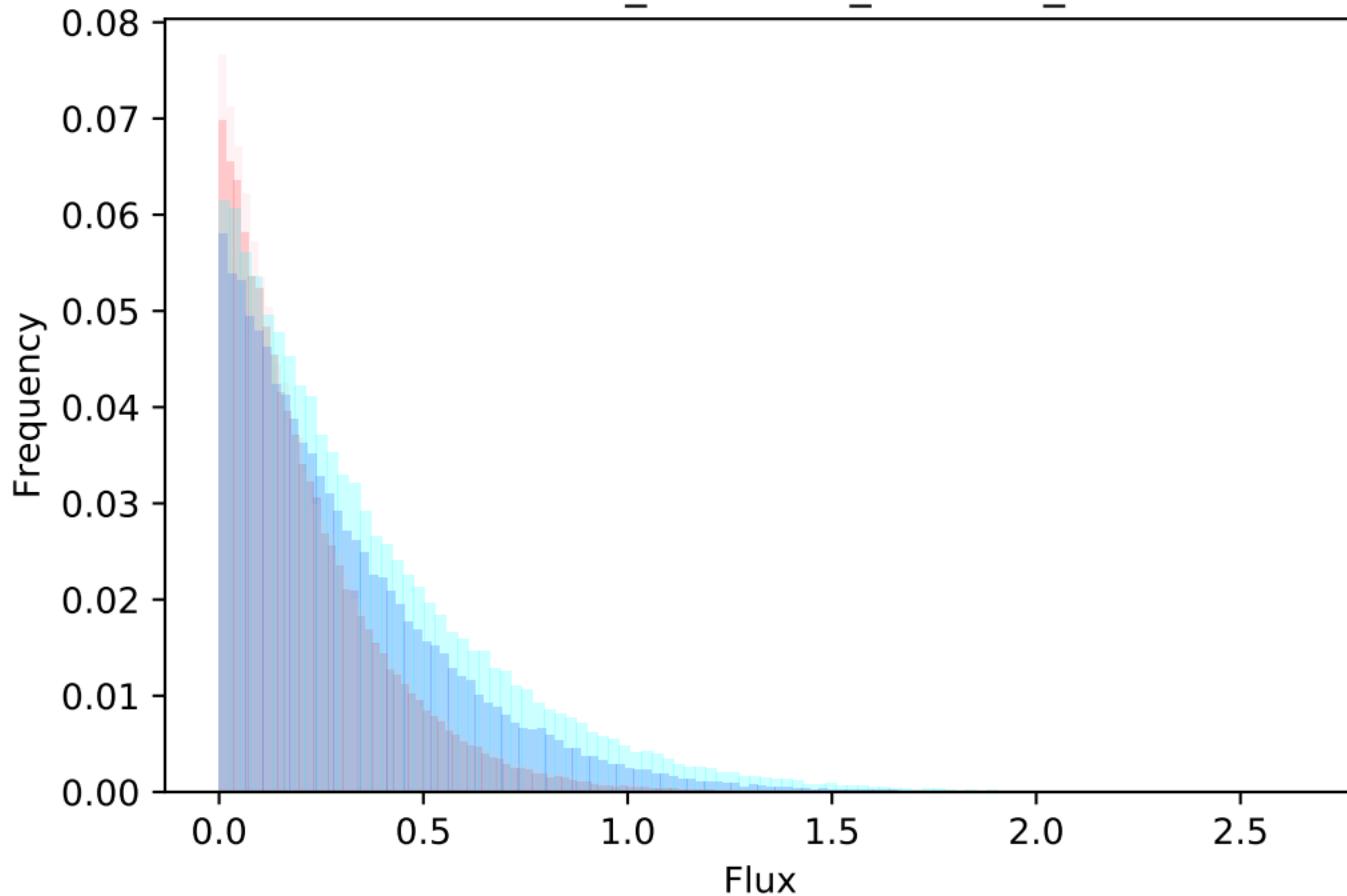
125 : NADP\_h + iCit\_h --> CO2\_h + KG\_h + NADPH\_h



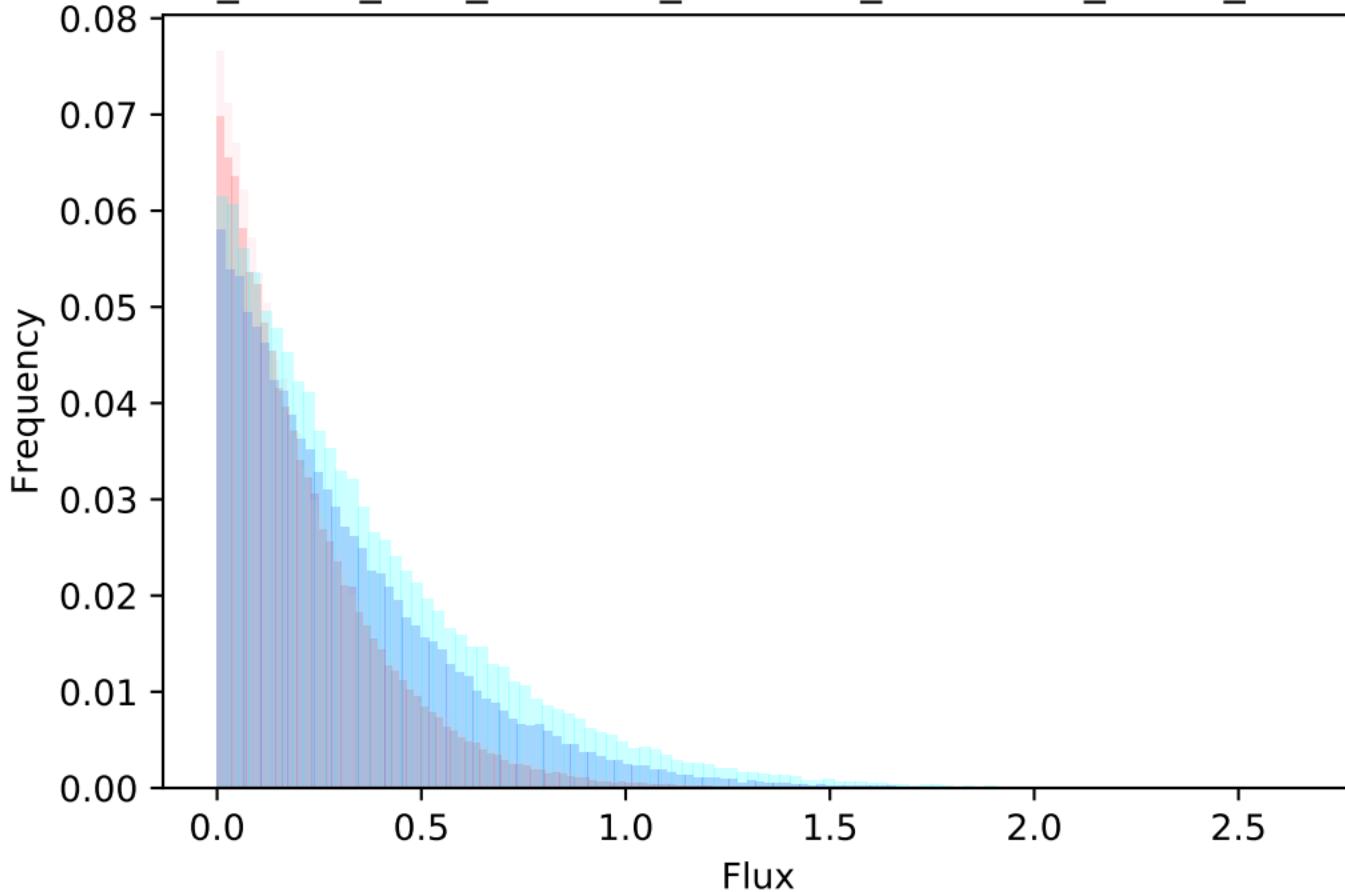
126 : NADP\_m + iCit\_m --> CO2\_m + KG\_m + NADPH\_m



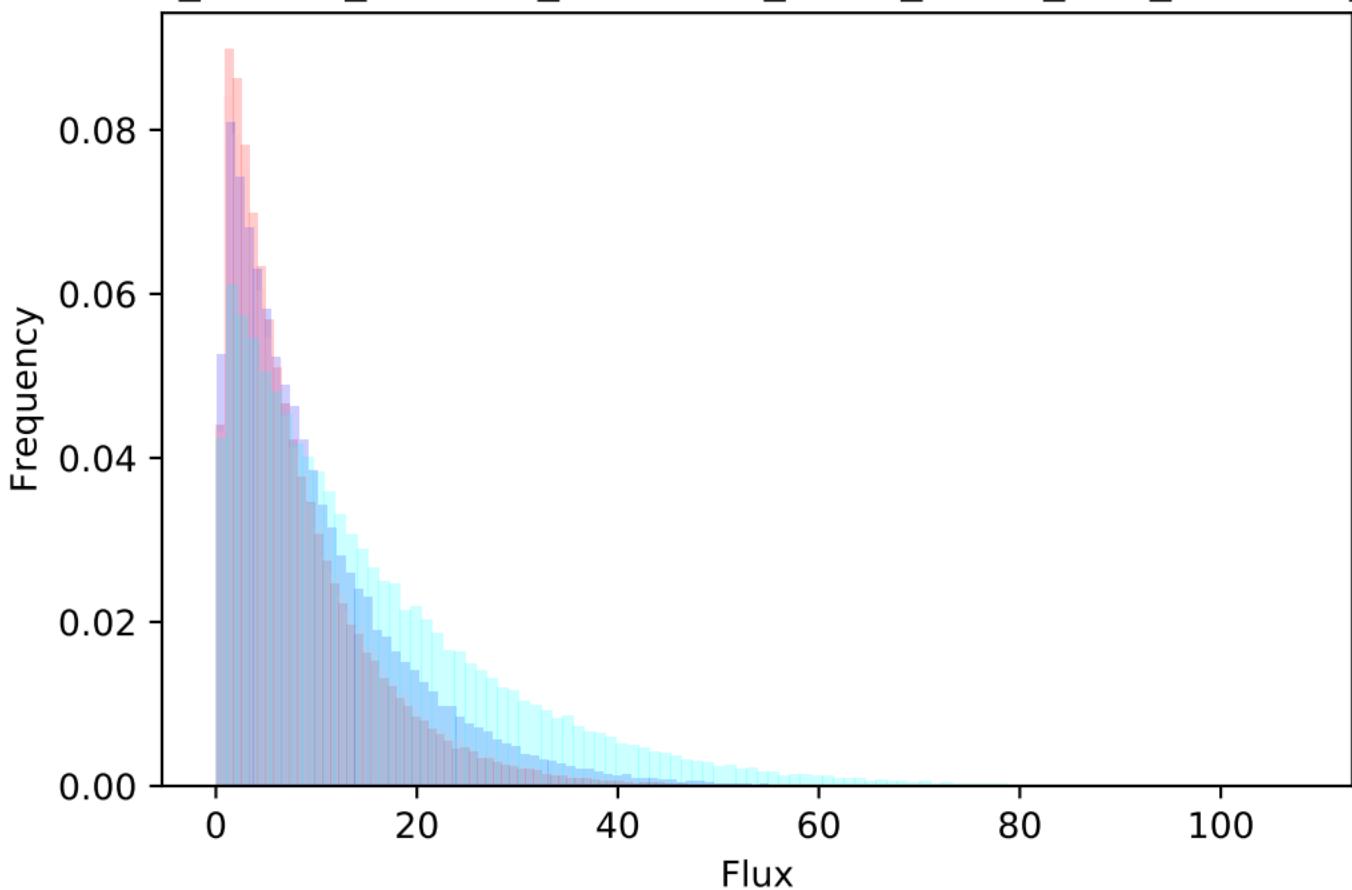
127 : iCit\_c --> GLX\_c + SCA\_c



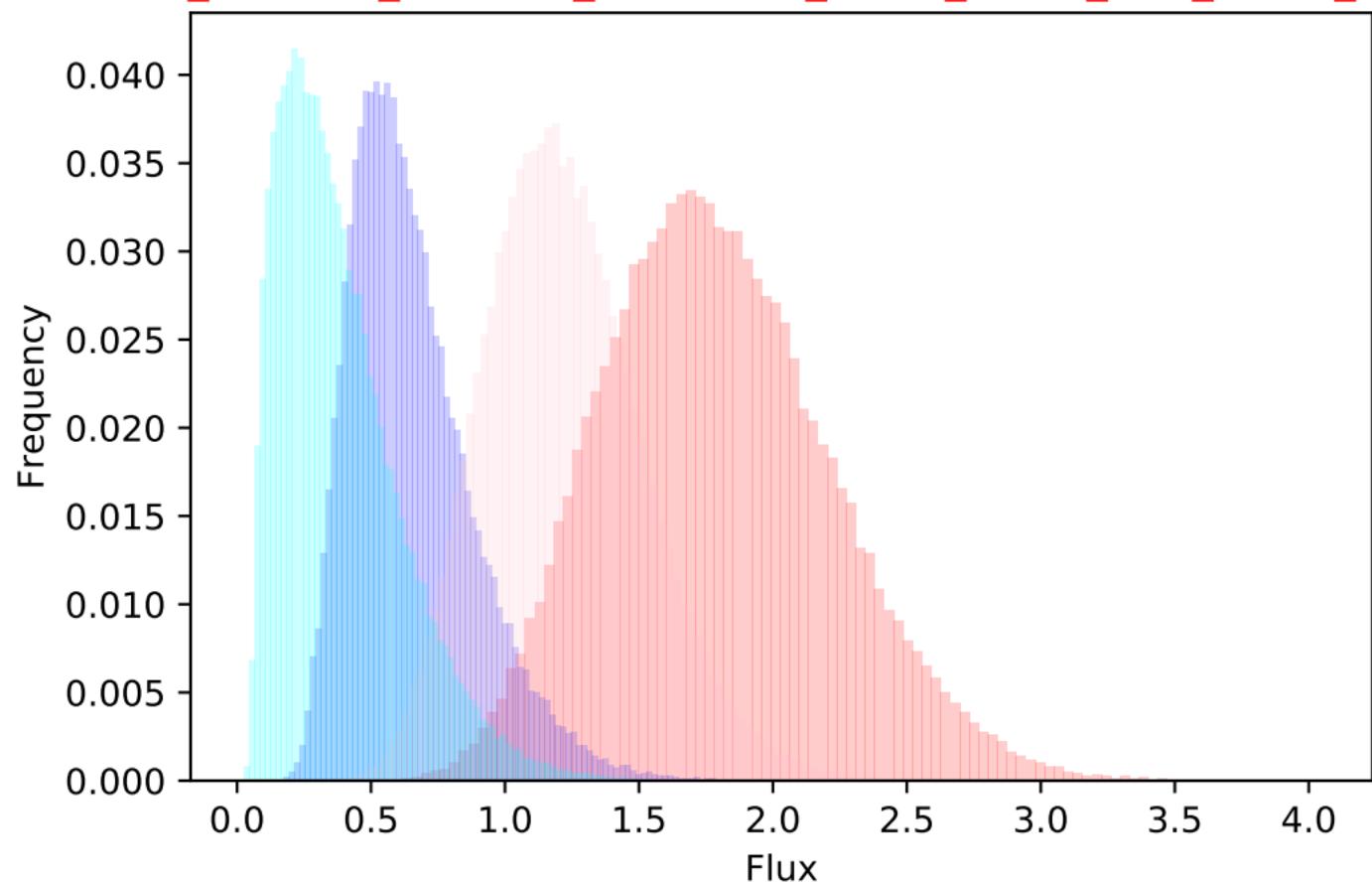
128 : A\_DASH\_CoA\_c + GLX\_c + H2O\_c --> CoA\_c + H\_c + Mal\_c

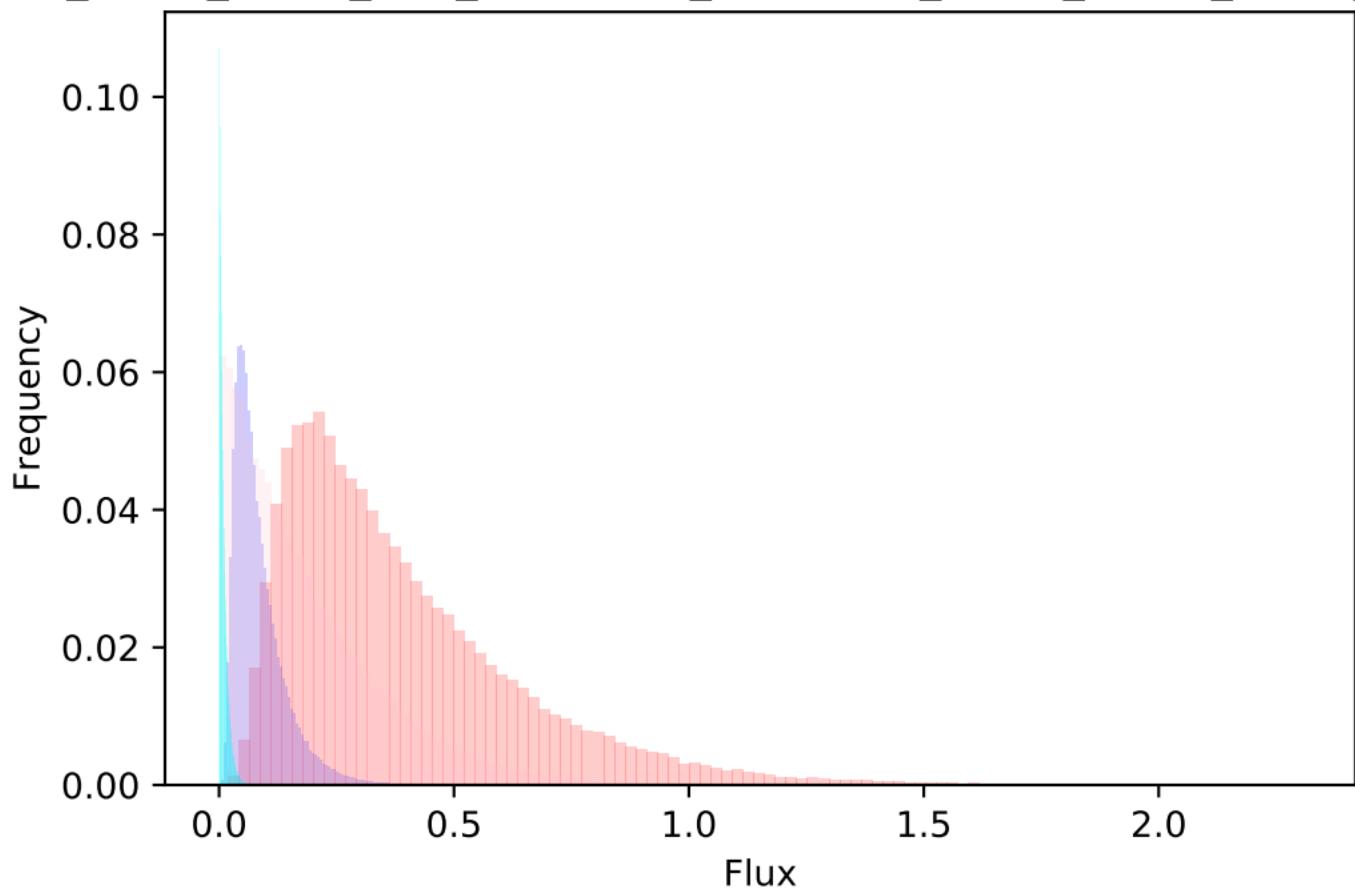
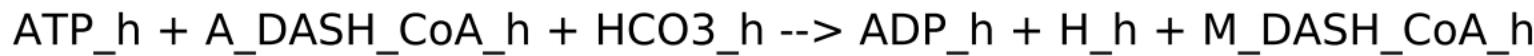


129 : ATP\_c + Cit\_c + CoA\_c --> ADP\_c + A\_DASH\_CoA\_c + OAA\_c + Pi\_c

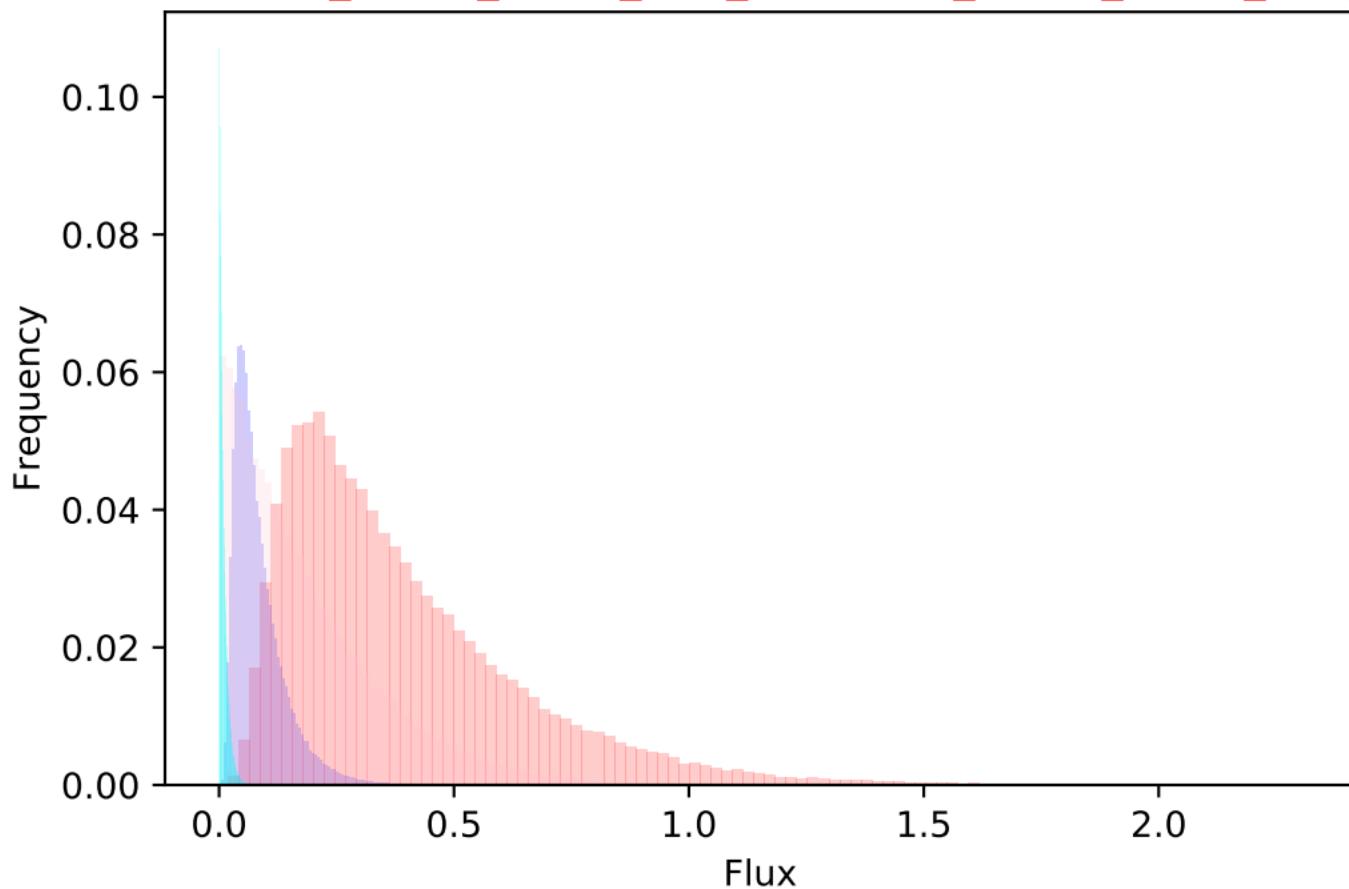


130 : AC\_h + ATP\_h + CoA\_h --> AMP\_h + A\_DASH\_CoA\_h + H\_h + PPi\_h

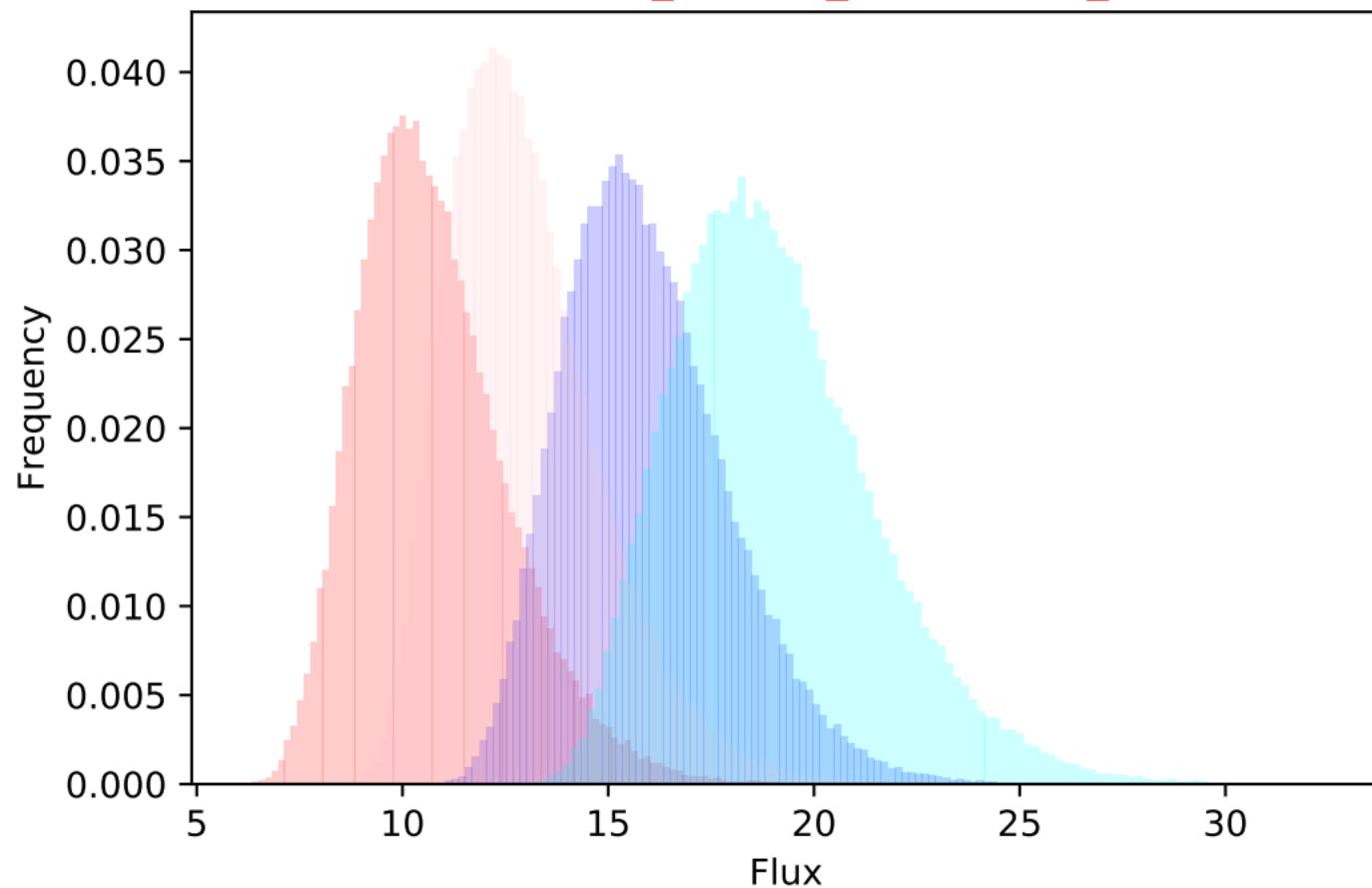


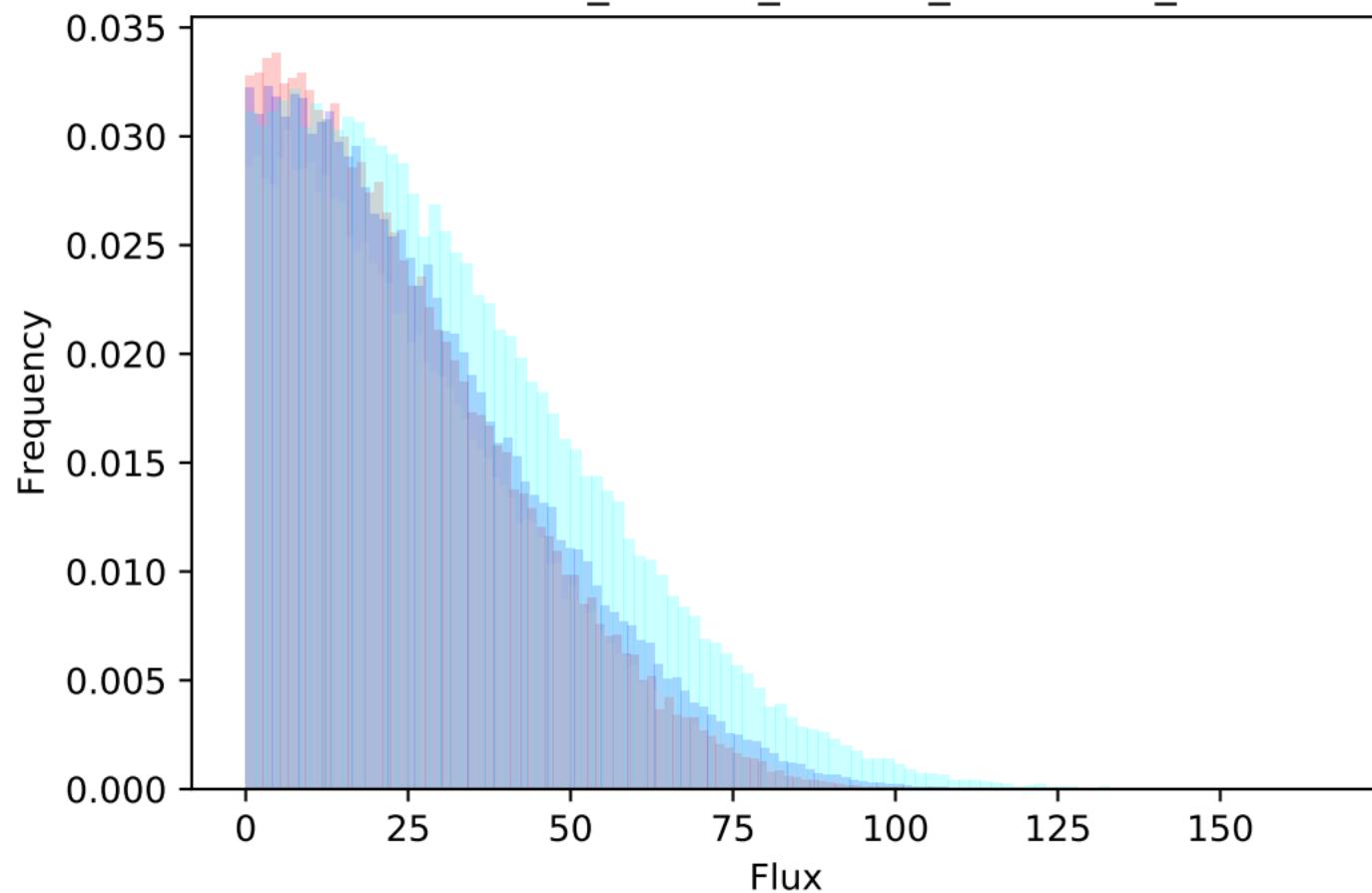
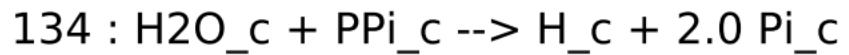


132 : ACP\_h + M\_DASH\_CoA\_h --> CoA\_h + M\_DASH\_ACP\_h

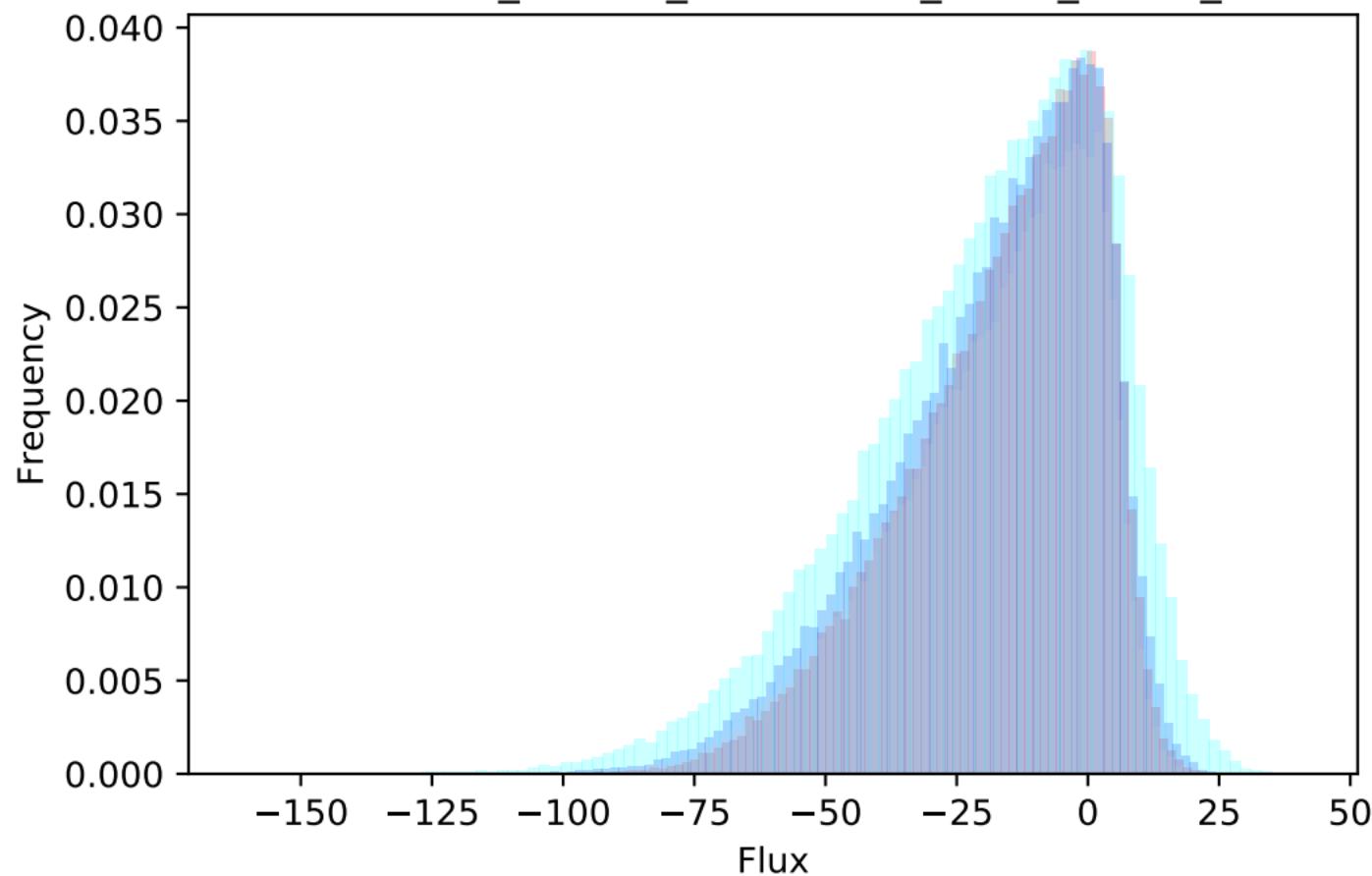


133 : H<sub>2</sub>O<sub>h</sub> + PPi<sub>h</sub> --> 2.0 Pi<sub>h</sub>

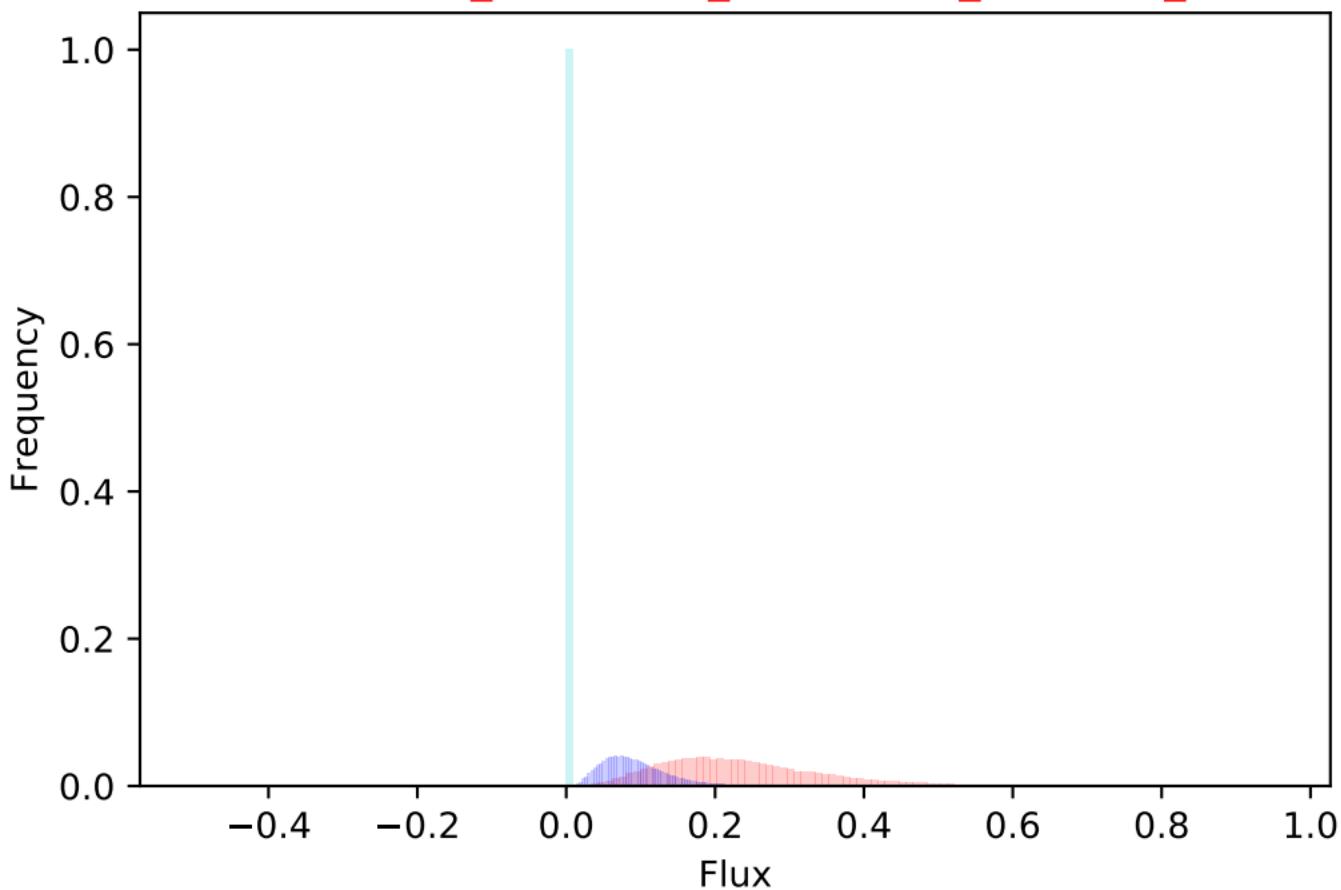




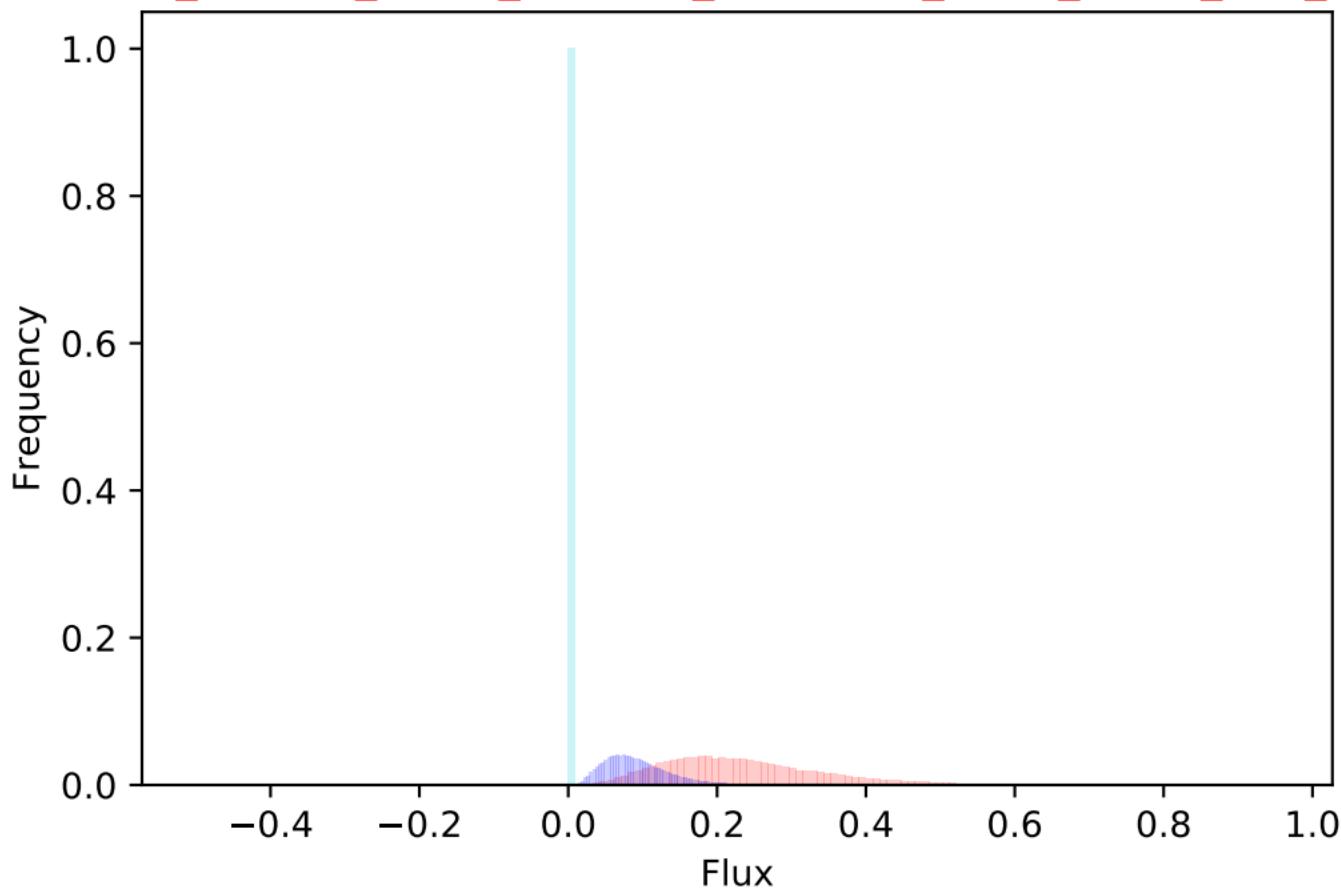
135 : F6P\_c + PPi\_c <=> FBP\_c + H\_c + Pi\_c



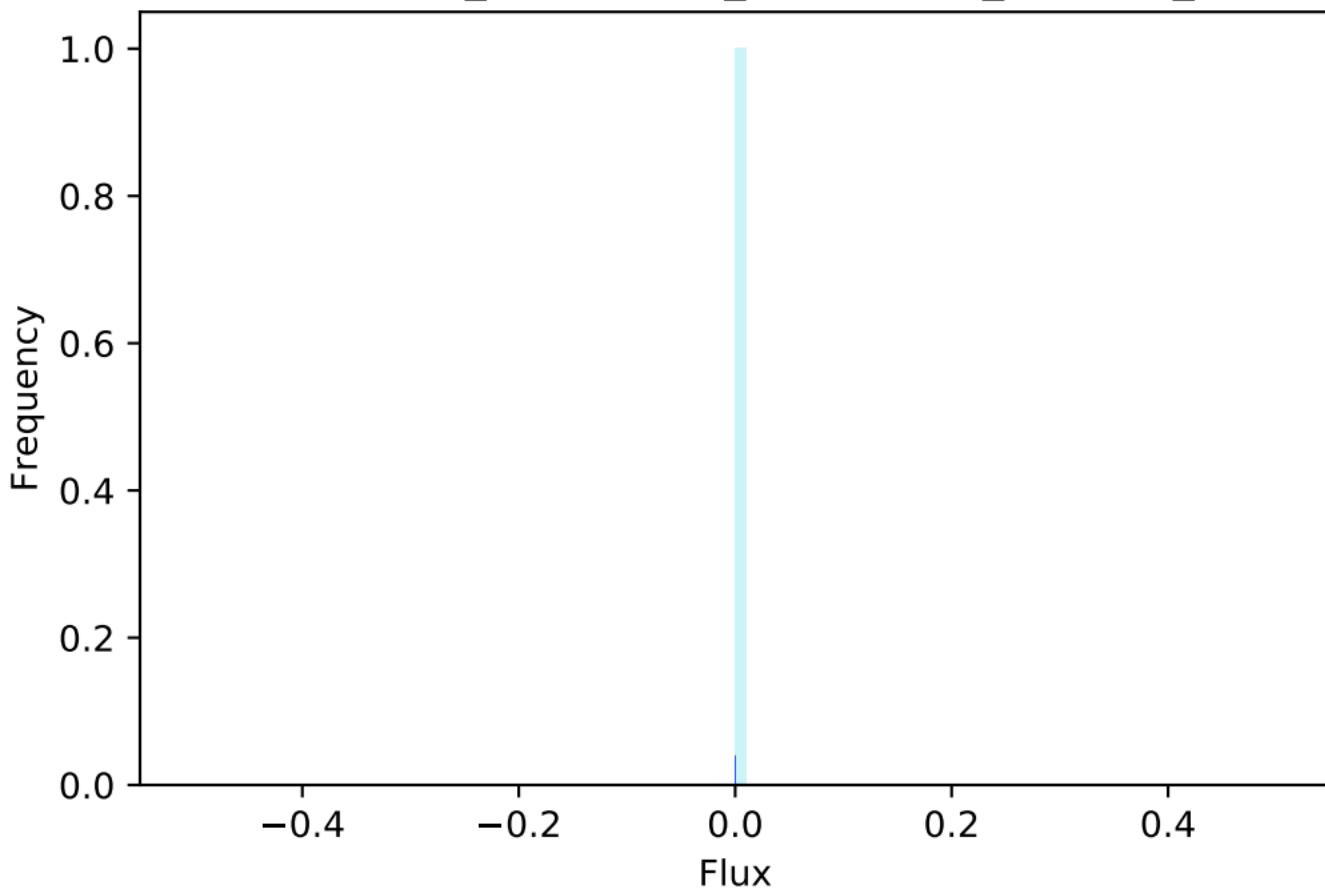
136 : CO2\_h + NADH\_h <=> For\_h + NAD\_h



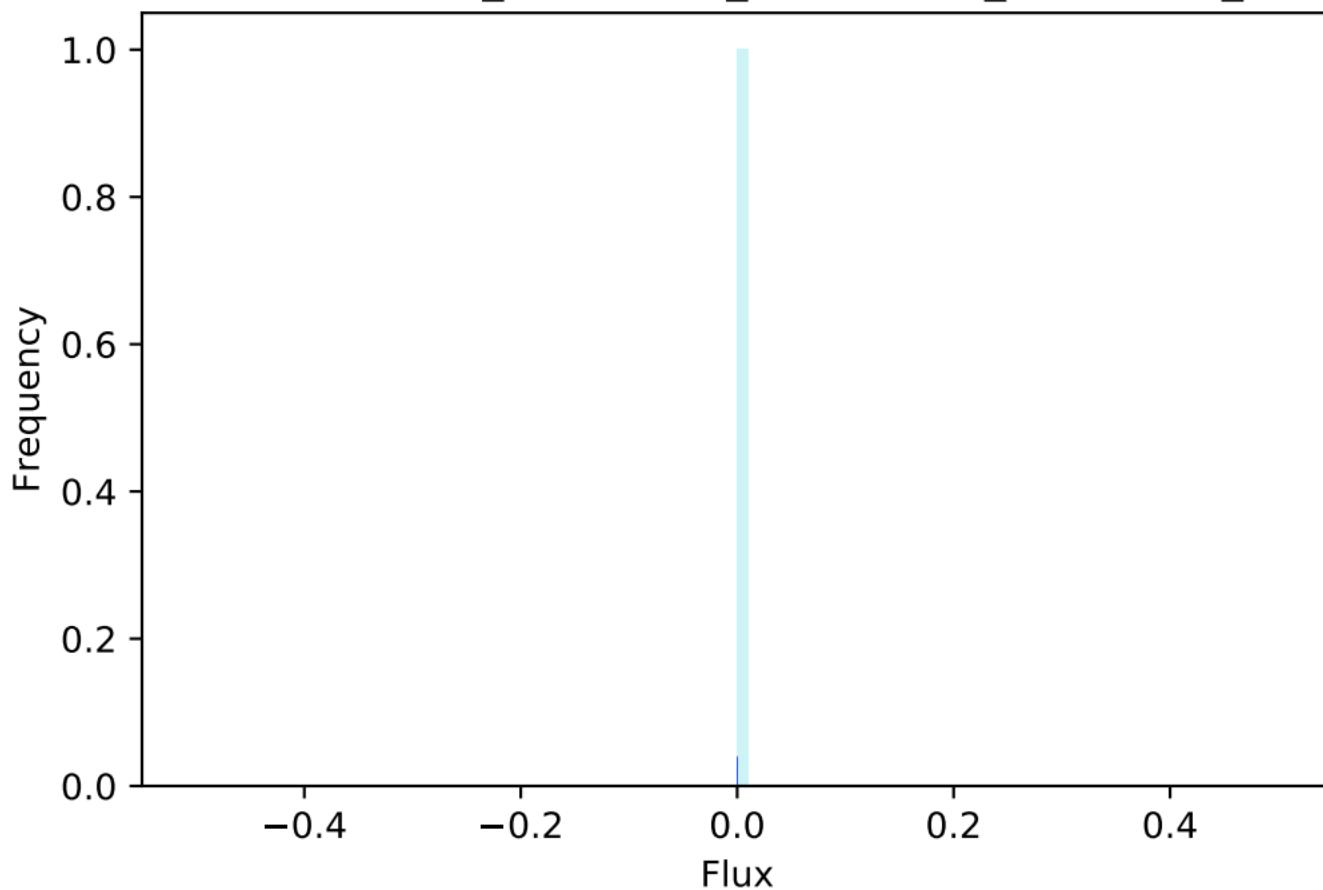
137 : ATP\_h + For\_h + H\_h + THF\_h --> ADP\_h + F\_DASH\_THF\_h + Pi\_h



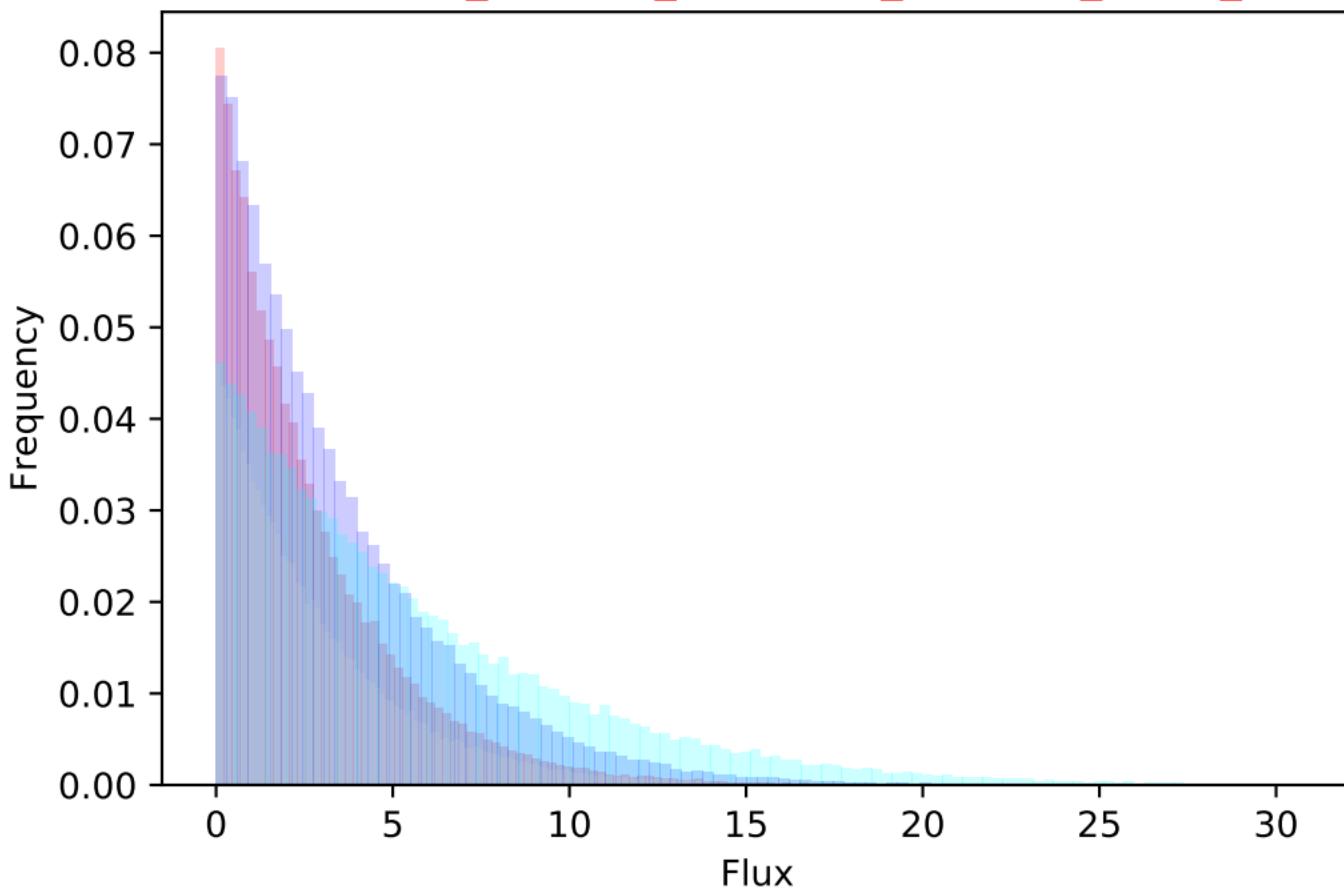
138 : DHF\_c + NADPH\_c --> NADP\_c + THF\_c



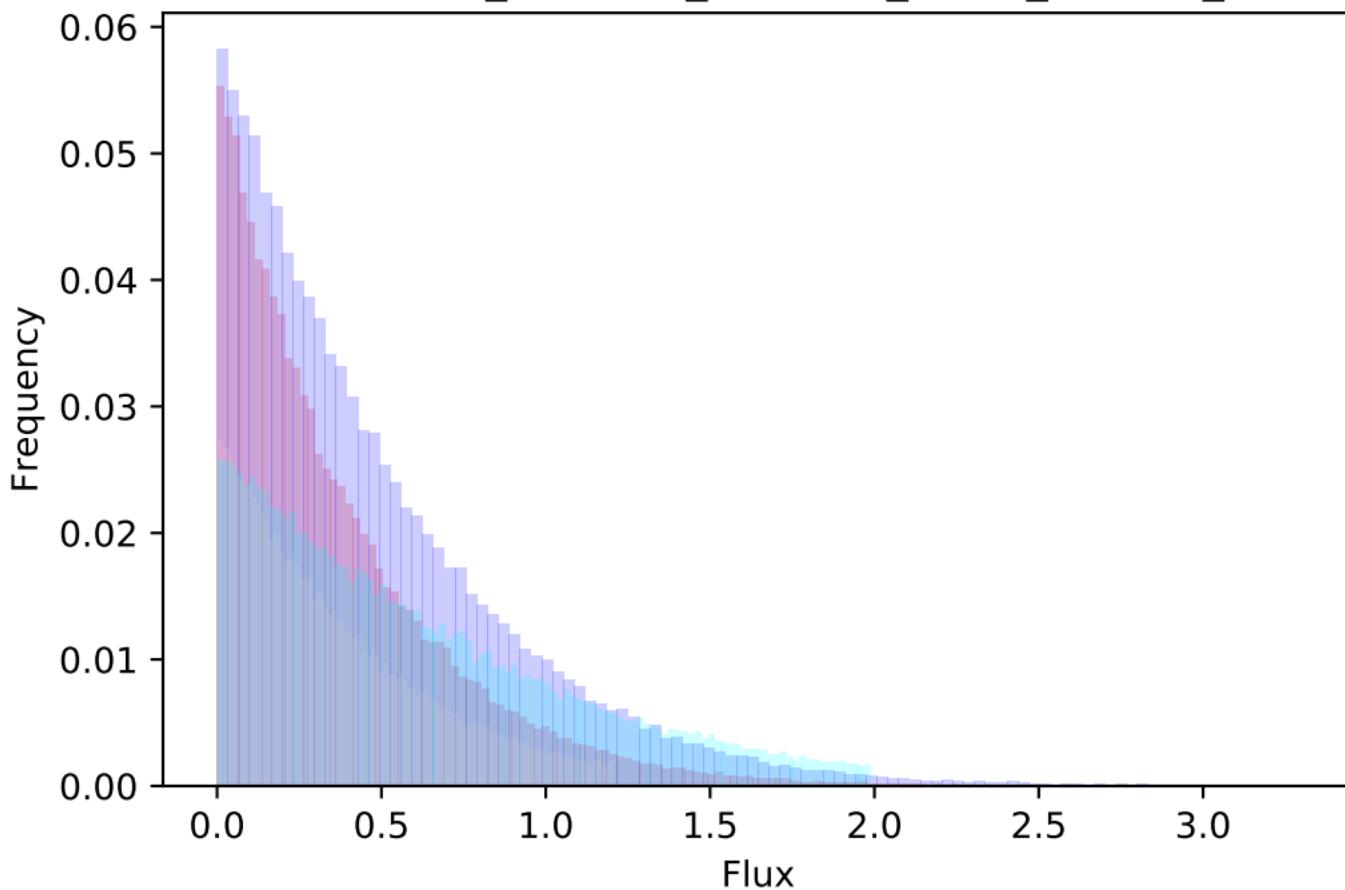
139 : NADPH\_c + TRXox\_c --> NADP\_c + TRXrd\_c

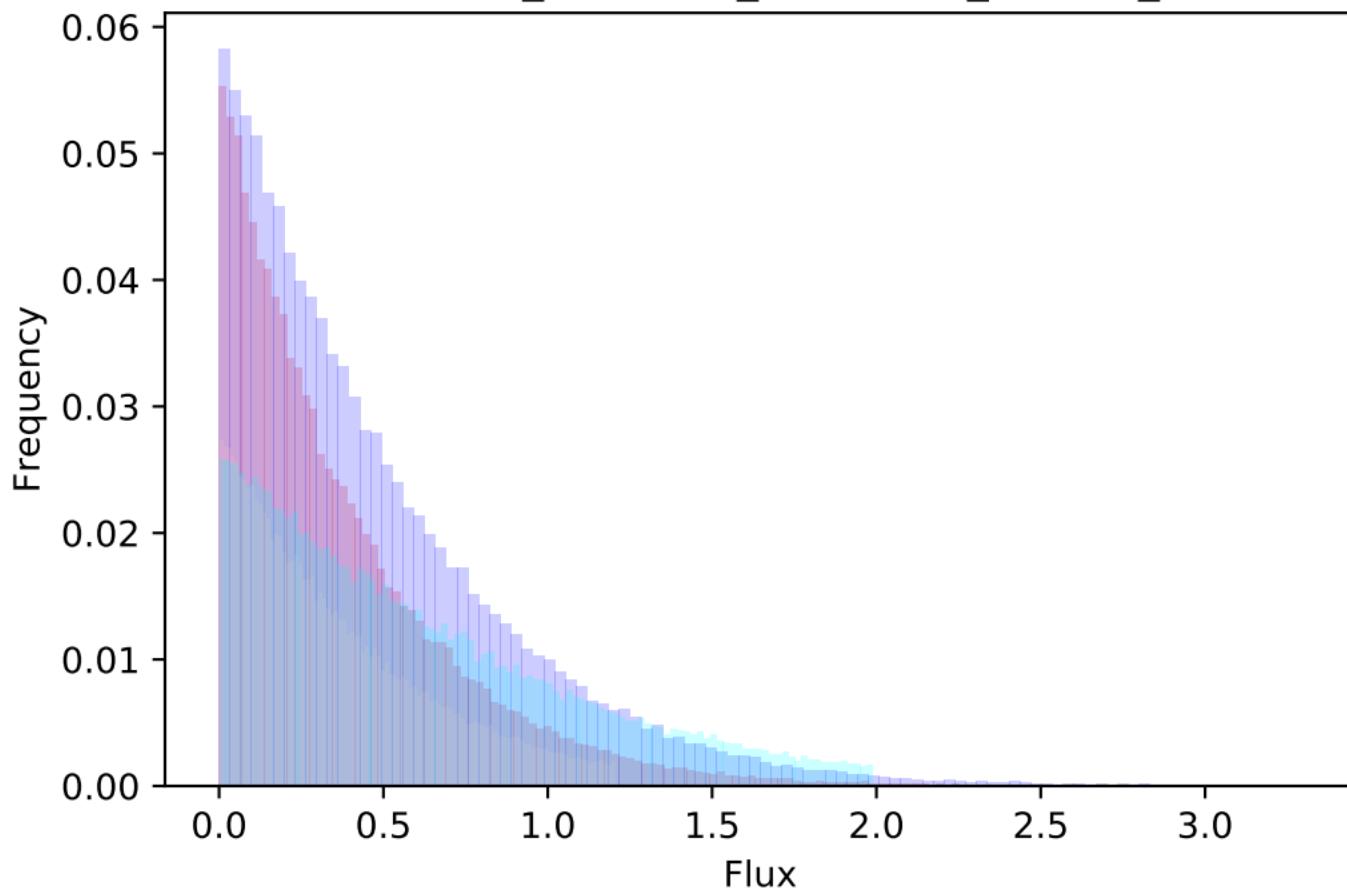


140 : ADN\_c + ATP\_c --> ADP\_c + AMP\_c + H\_c

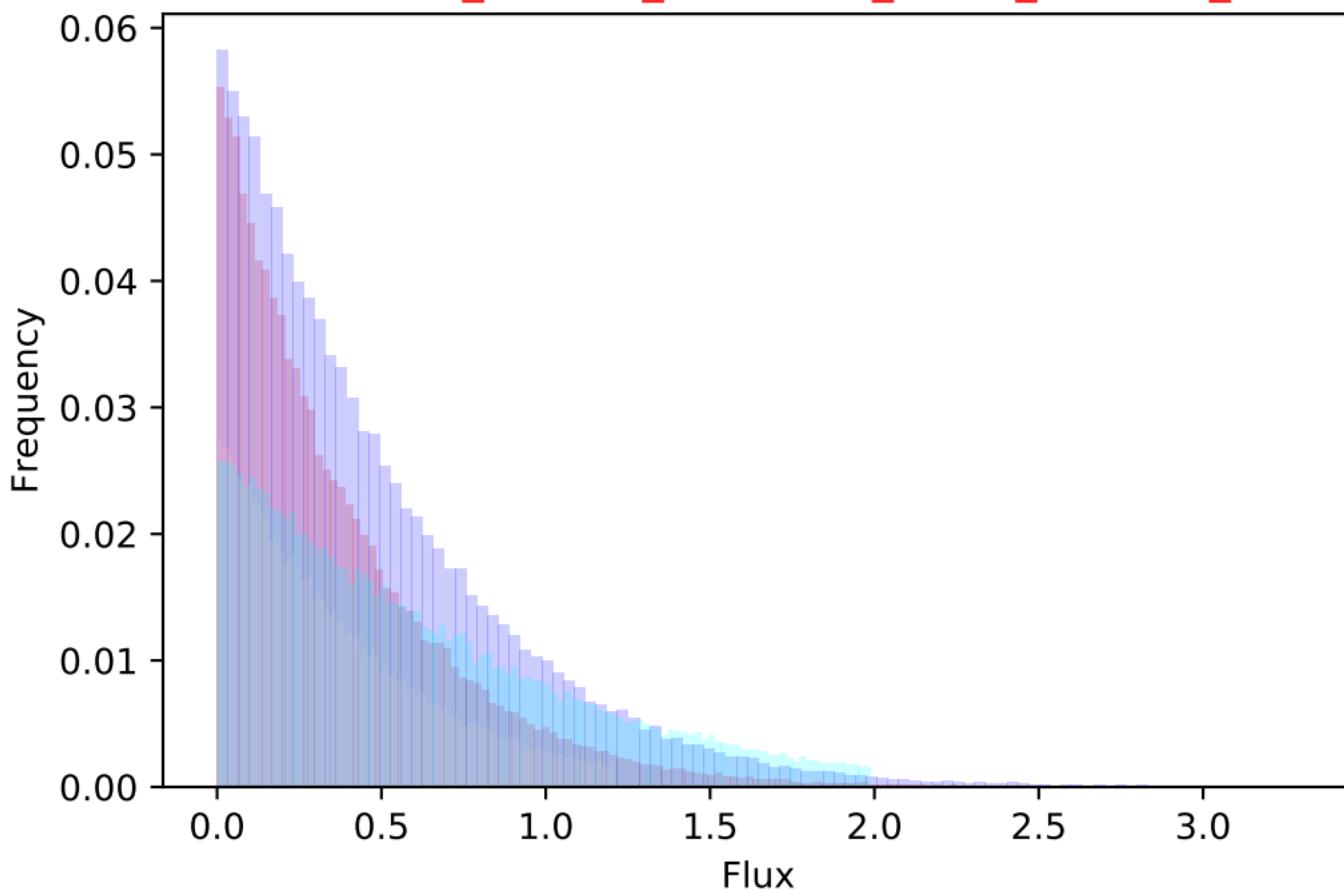


141 : ADN\_c + H2O\_c --> AD\_c + H\_c + Rib\_c

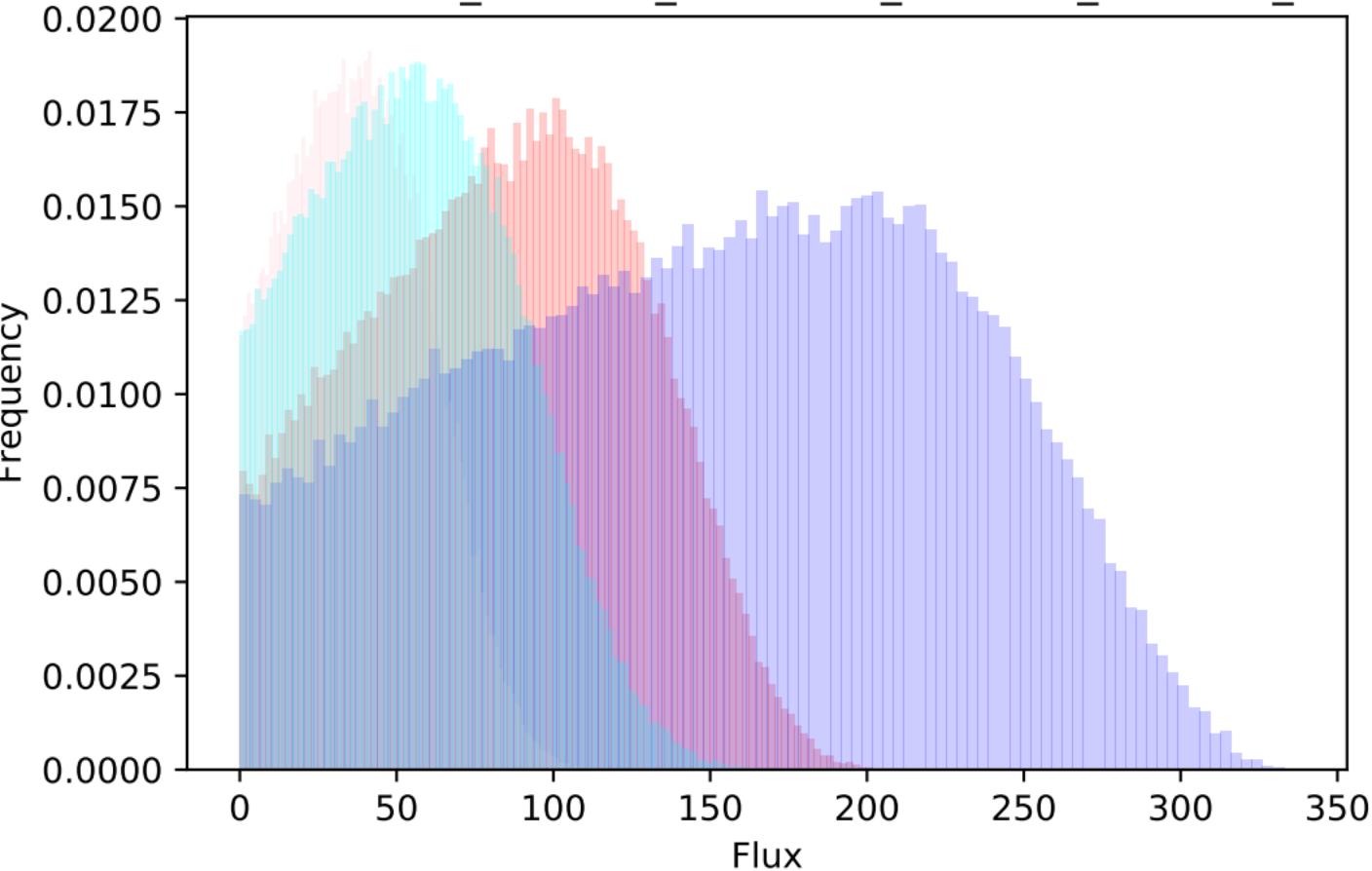


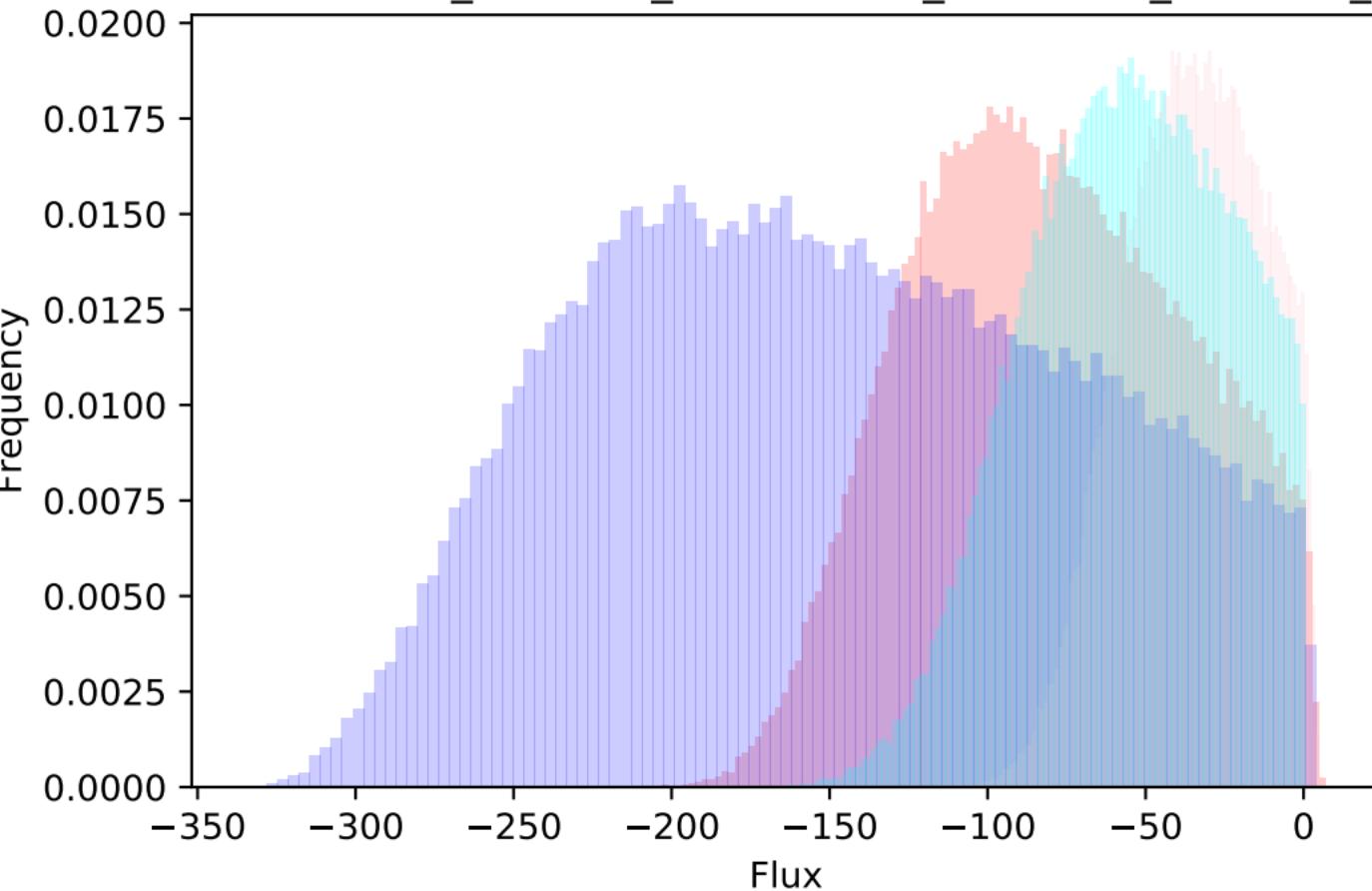
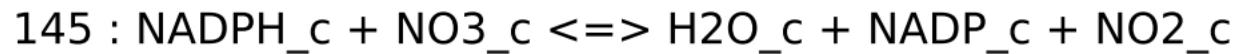


143 : ATP\_h + Rib\_h --> ADP\_h + H\_h + R5P\_h

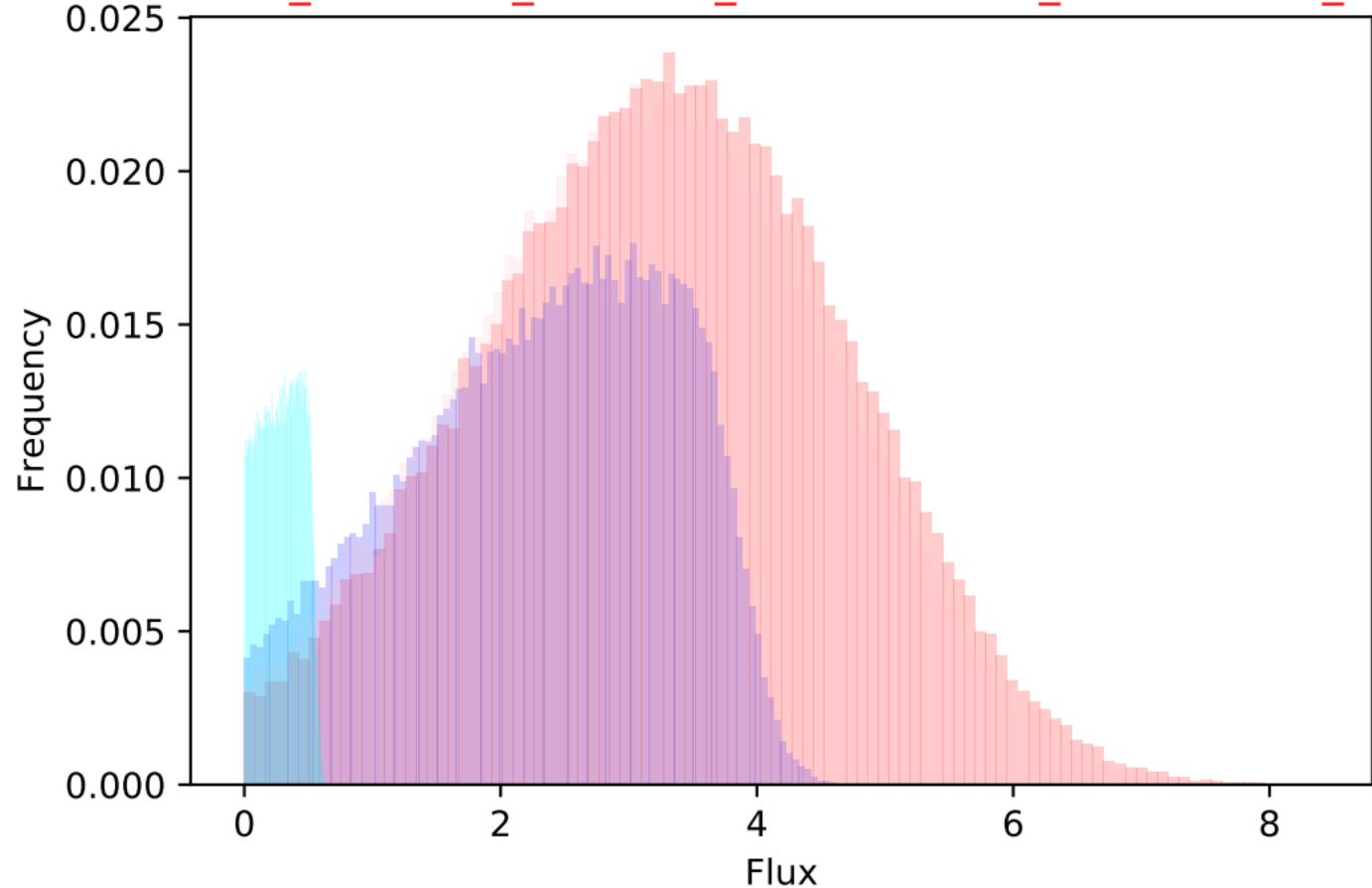


144 : NADH\_c + NO3\_c --> H2O\_c + NAD\_c + NO2\_c

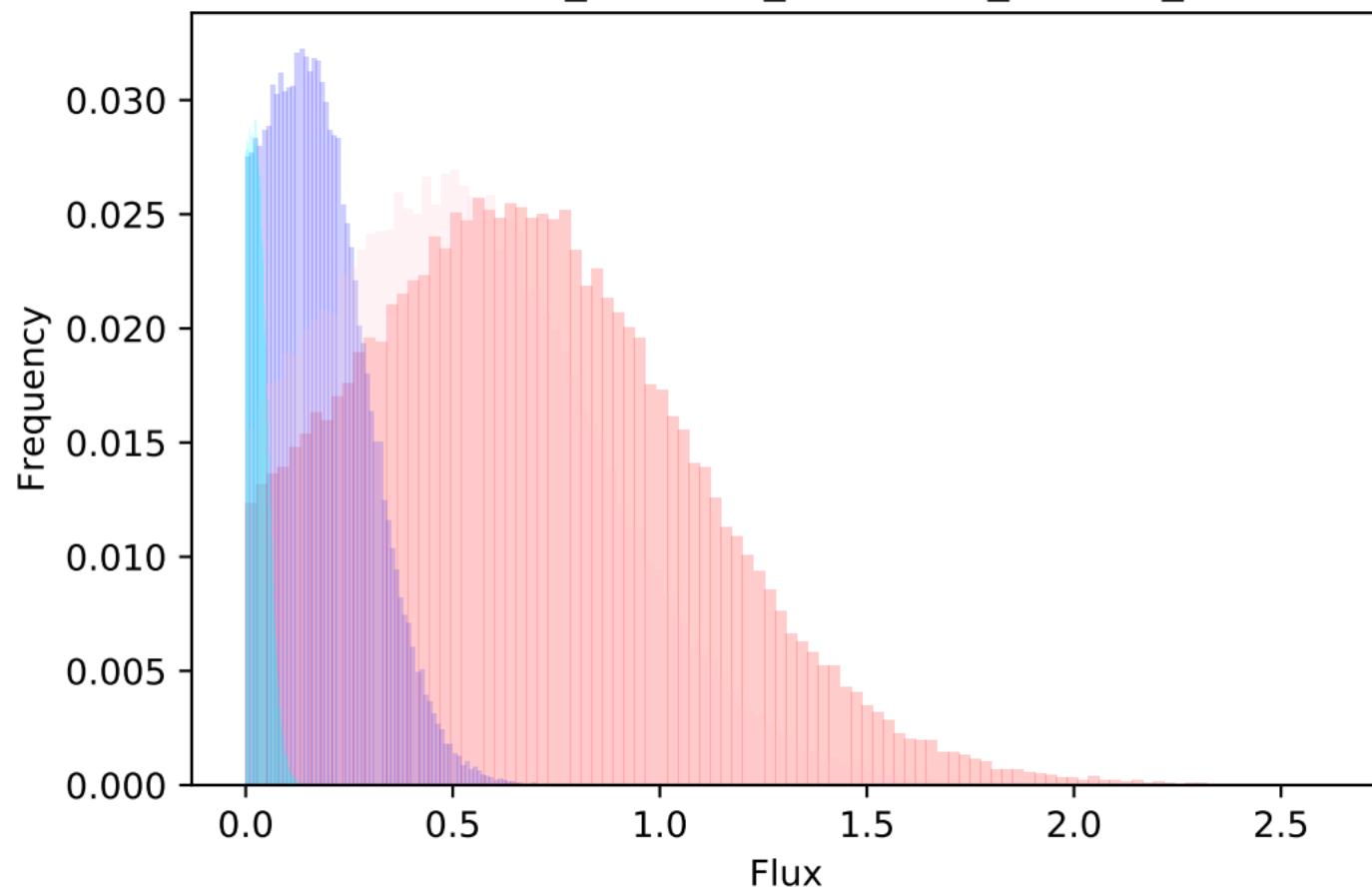


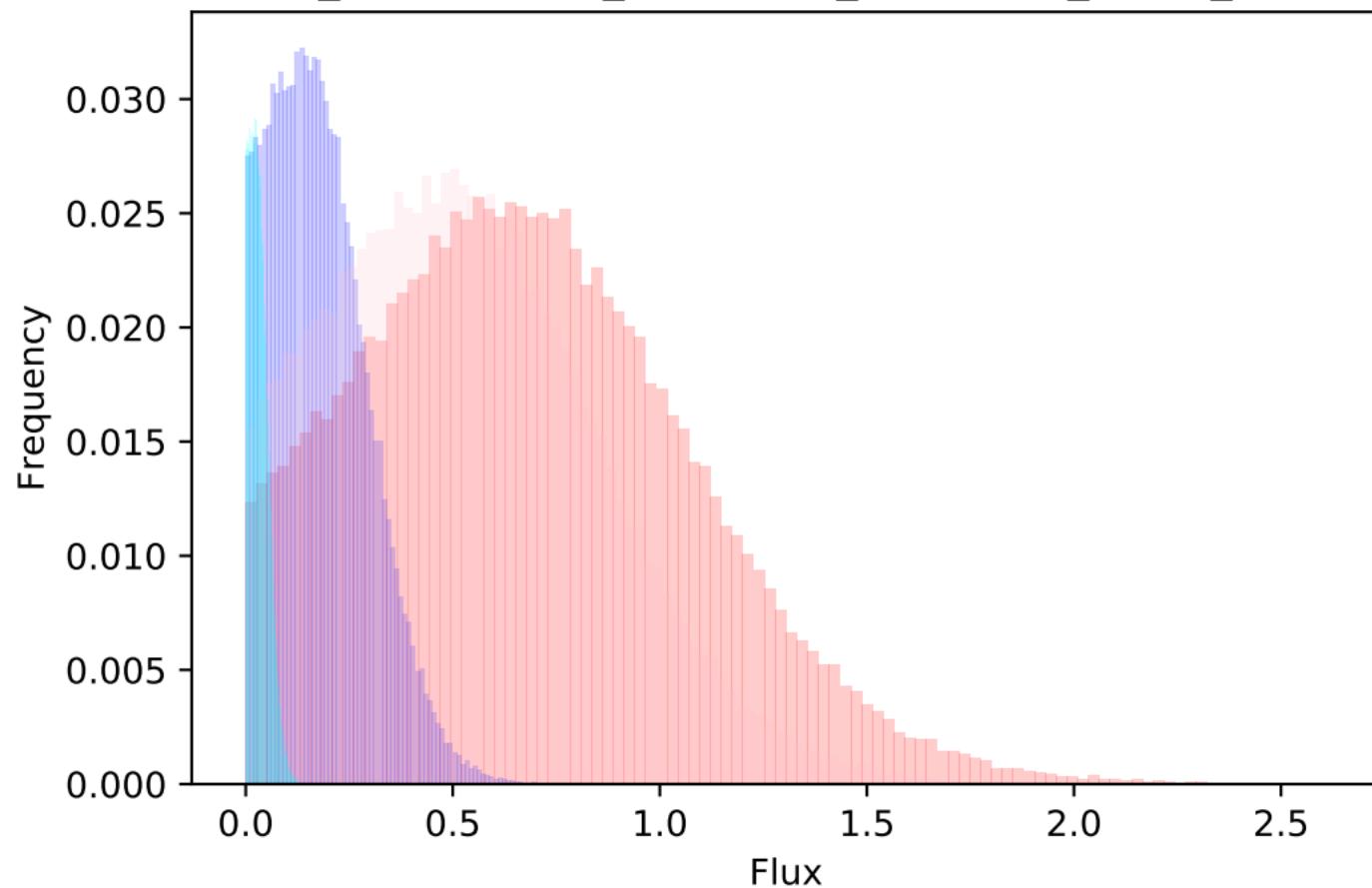


146 : 6.0 Fdrv\_h + 8.0 H\_h + NO2\_h --> 6.0 Fdox\_h + 2.0 H2O\_h + NH4

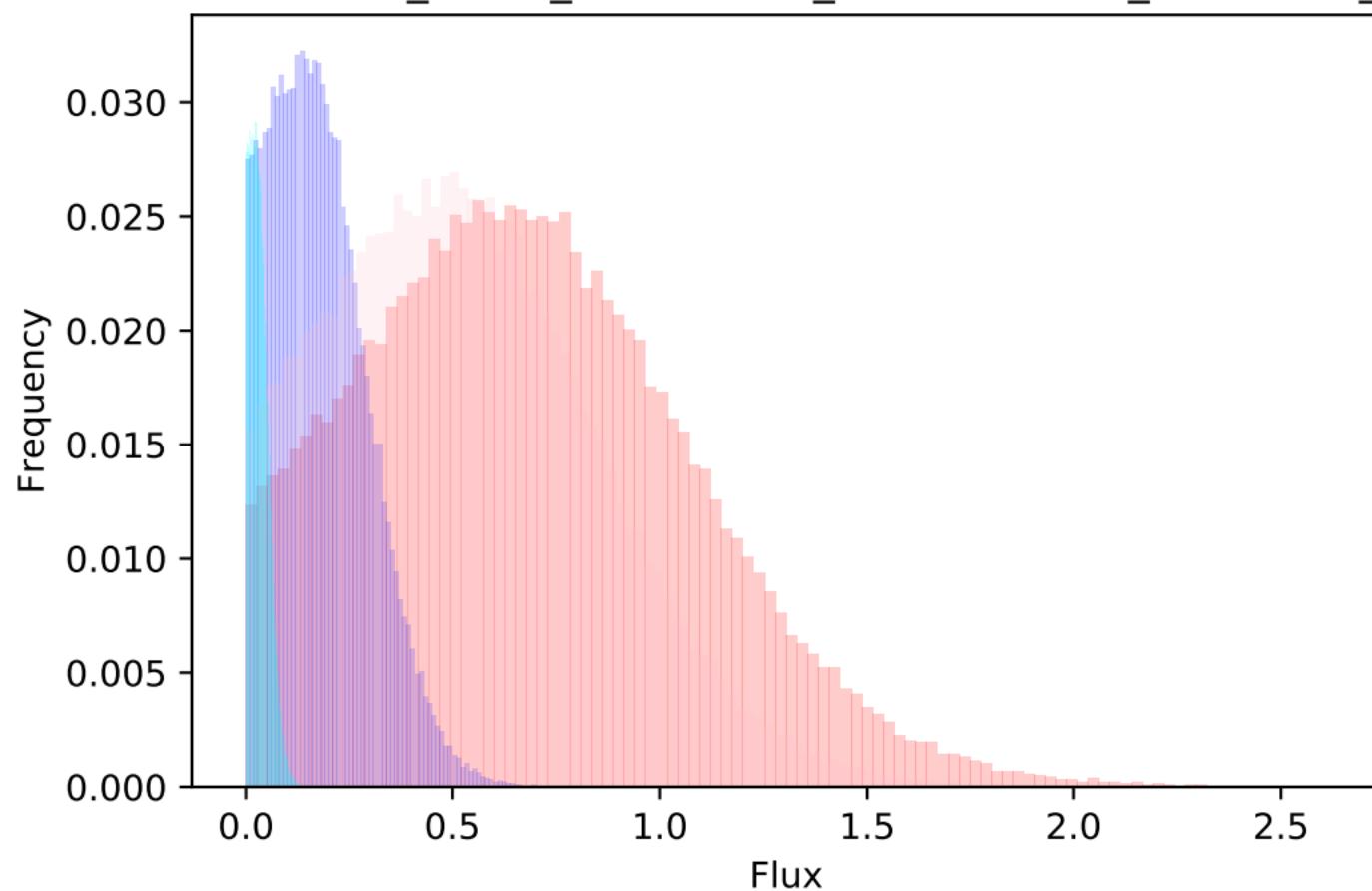


147 : ATP\_h + SO4\_h --> APS\_h + PPi\_h

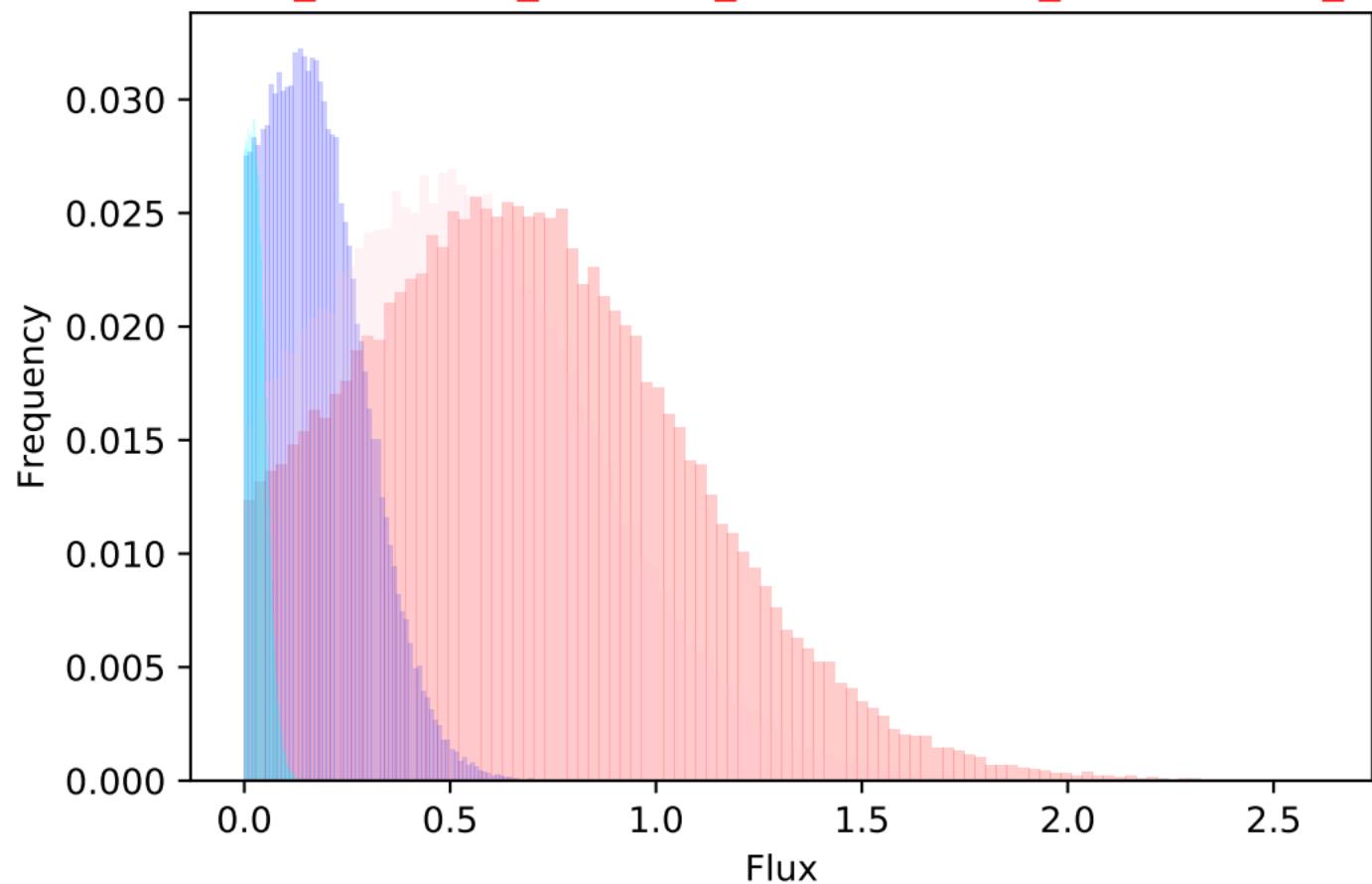


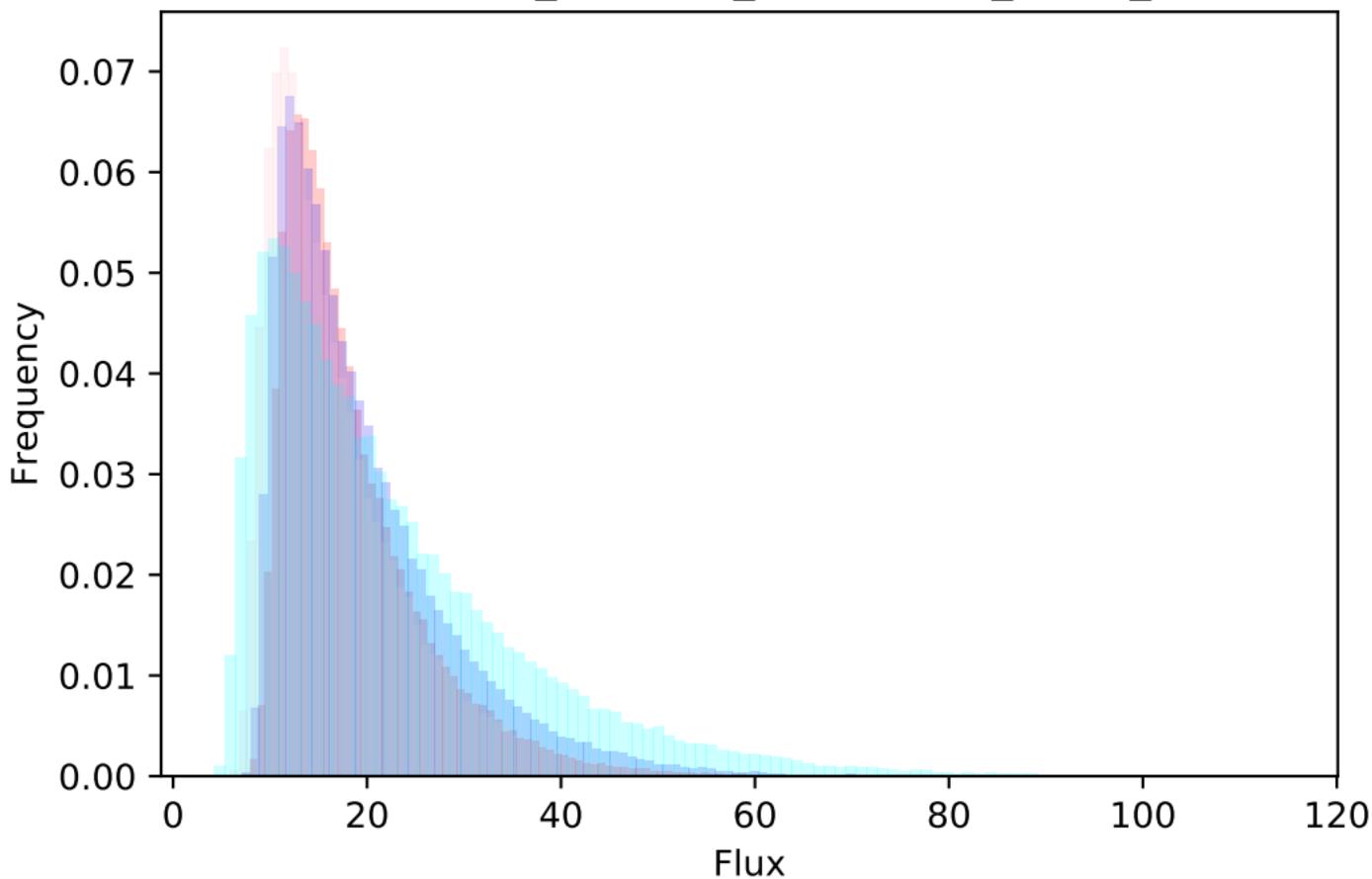


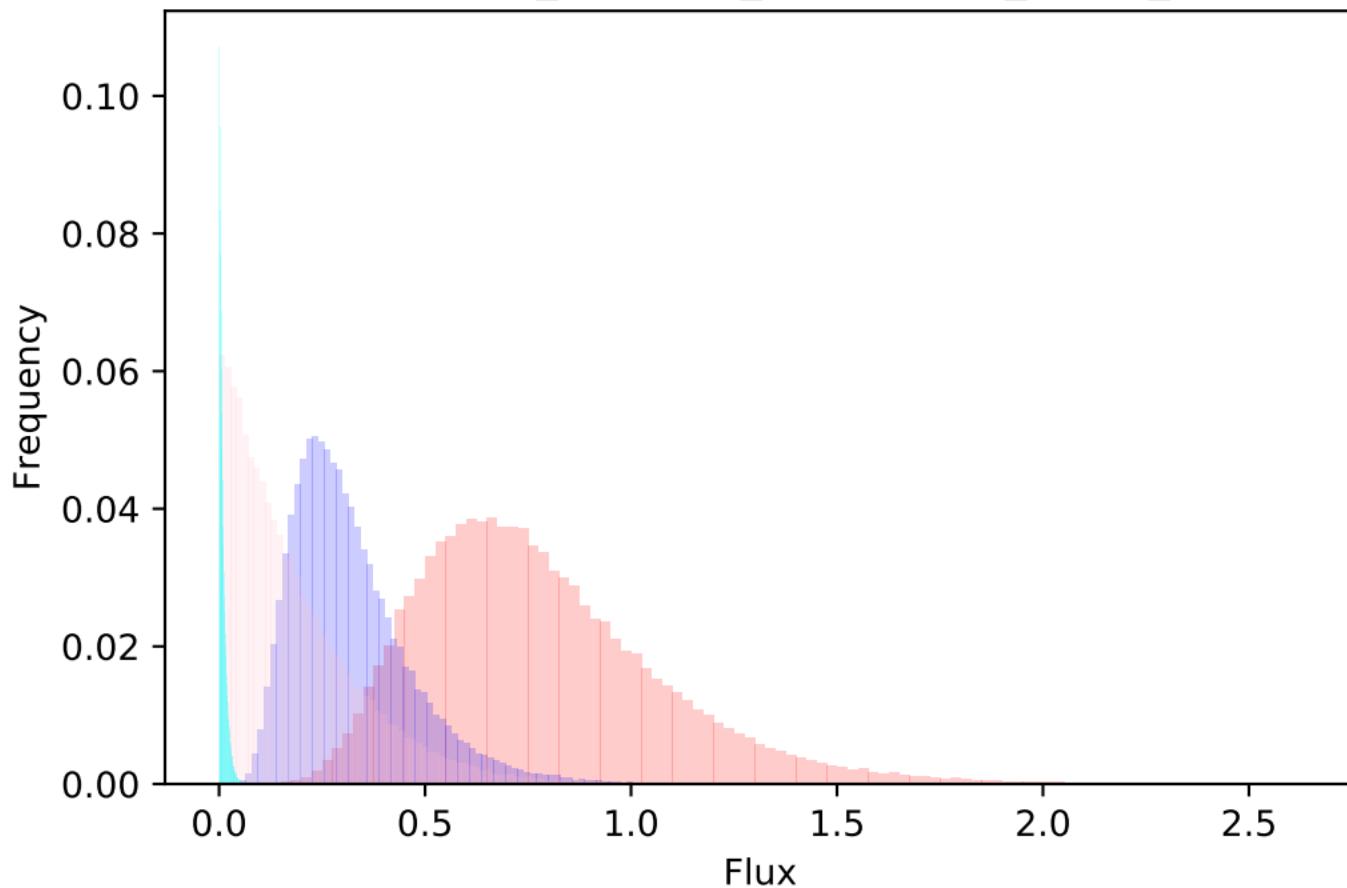
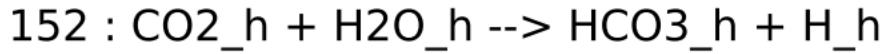
149 : GSSG\_h + H\_h + NADPH\_h --> 2.0 GSH\_h + NADP\_h



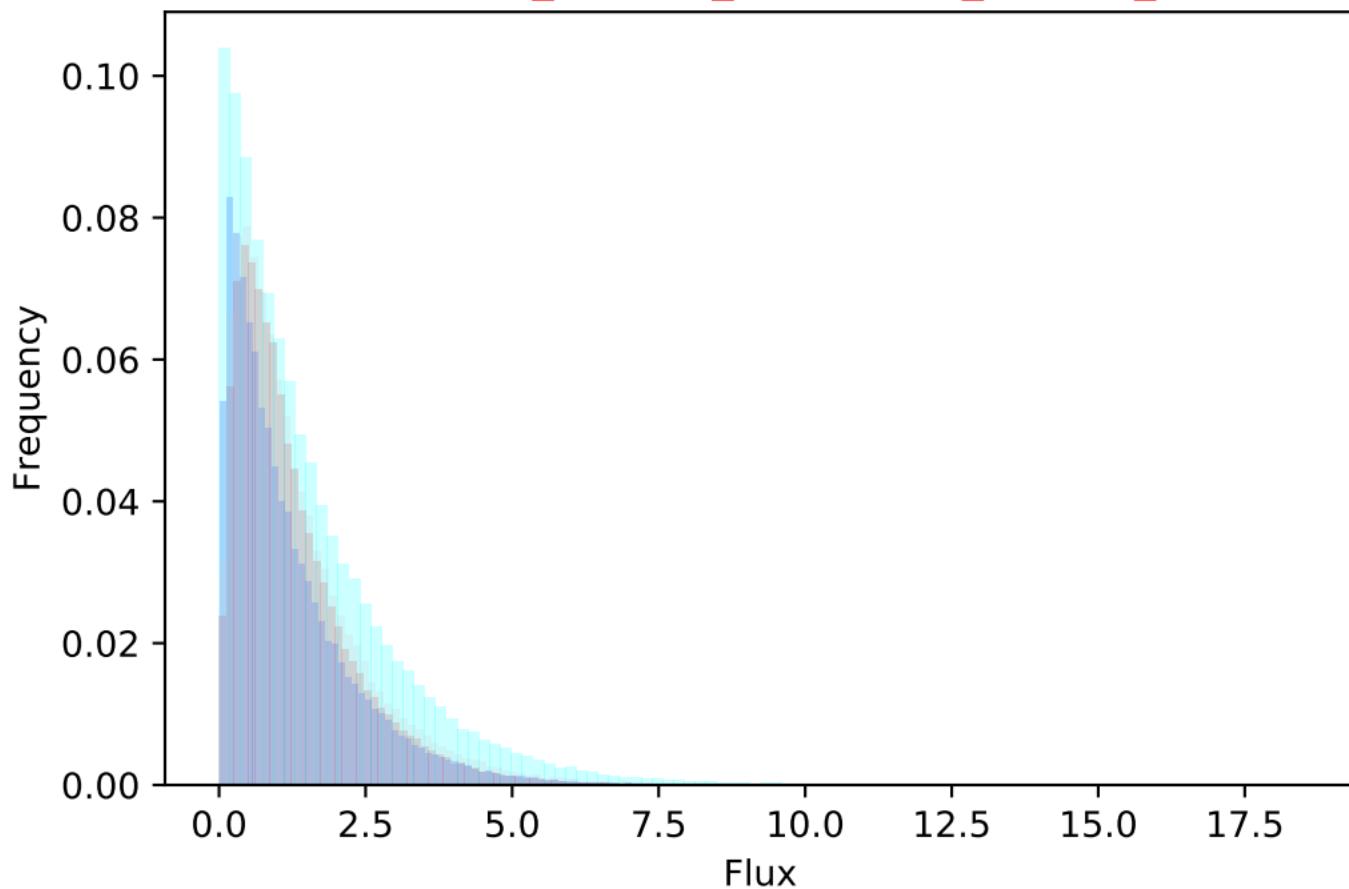
150 : 3.0 Fdrd\_h + 7.0 H\_h + SO3\_h --> 3.0 Fdox\_h + 3.0 H2O\_h + H2S



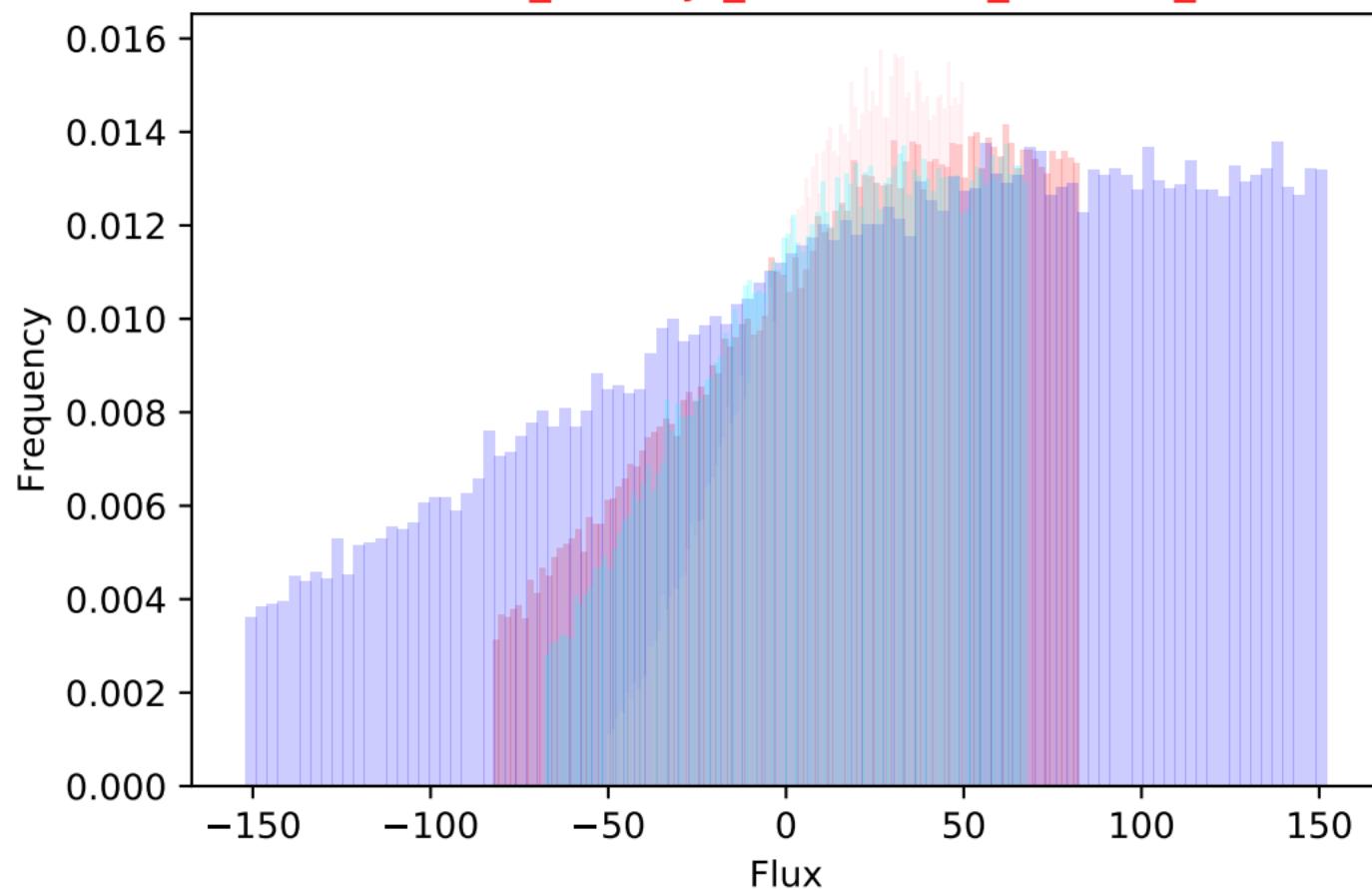




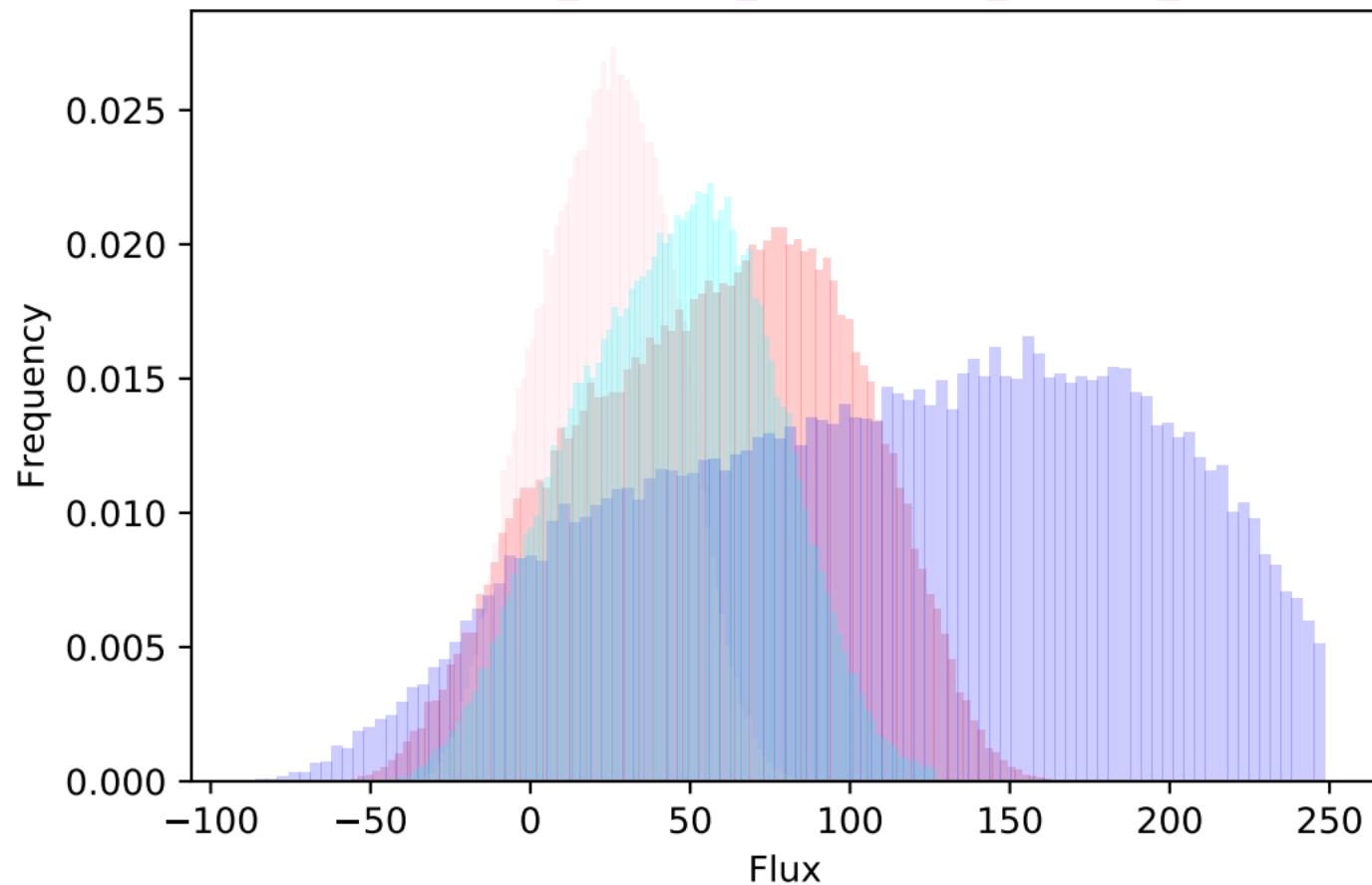
153 : Glu\_h + Pyr\_h <=> Ala\_h + KG\_h



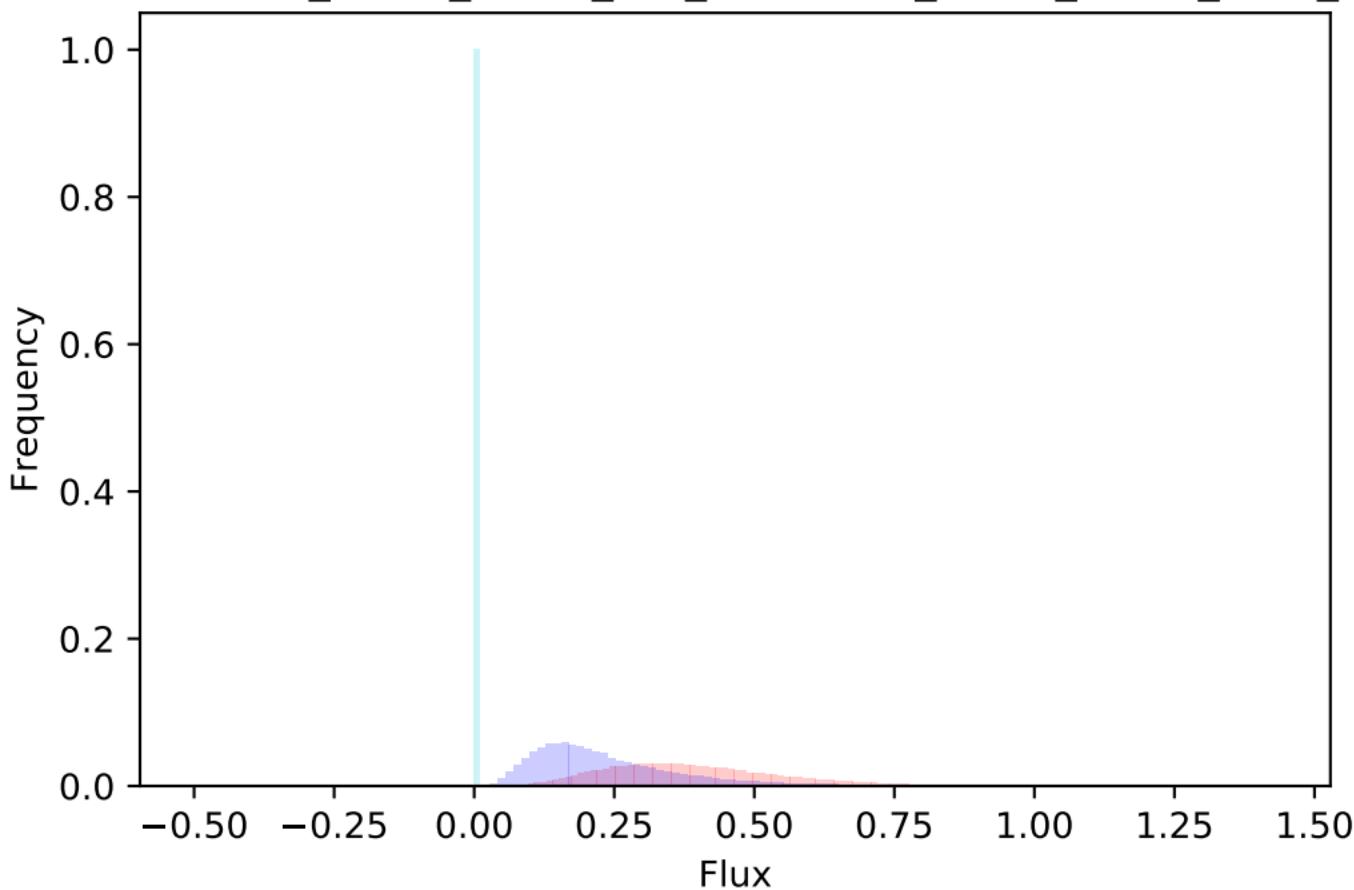
154 : Glu\_m + Pyr\_m <=> Ala\_m + KG\_m

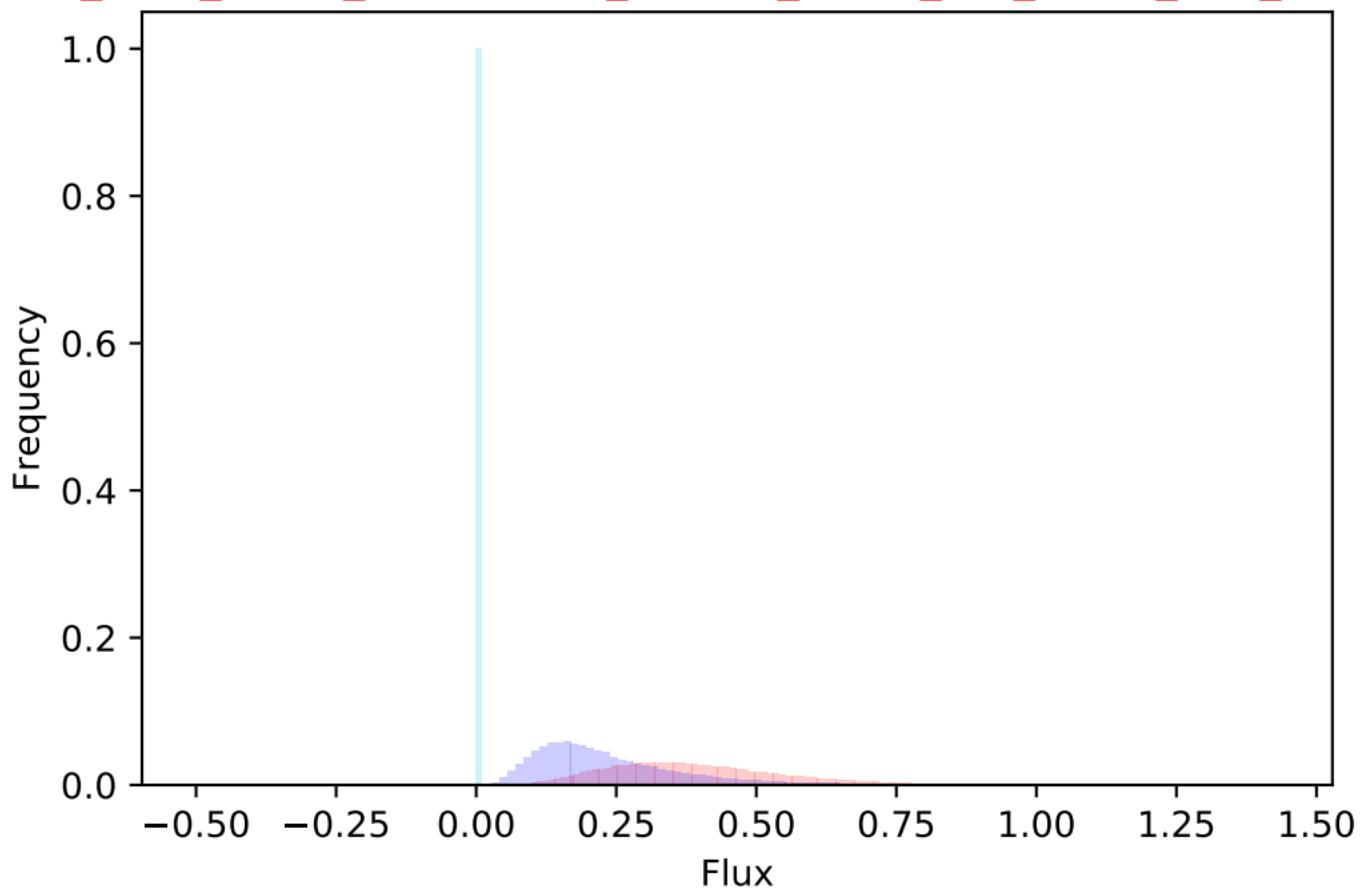


155 : Glu\_p + Pyr\_p <=> Ala\_p + KG\_p

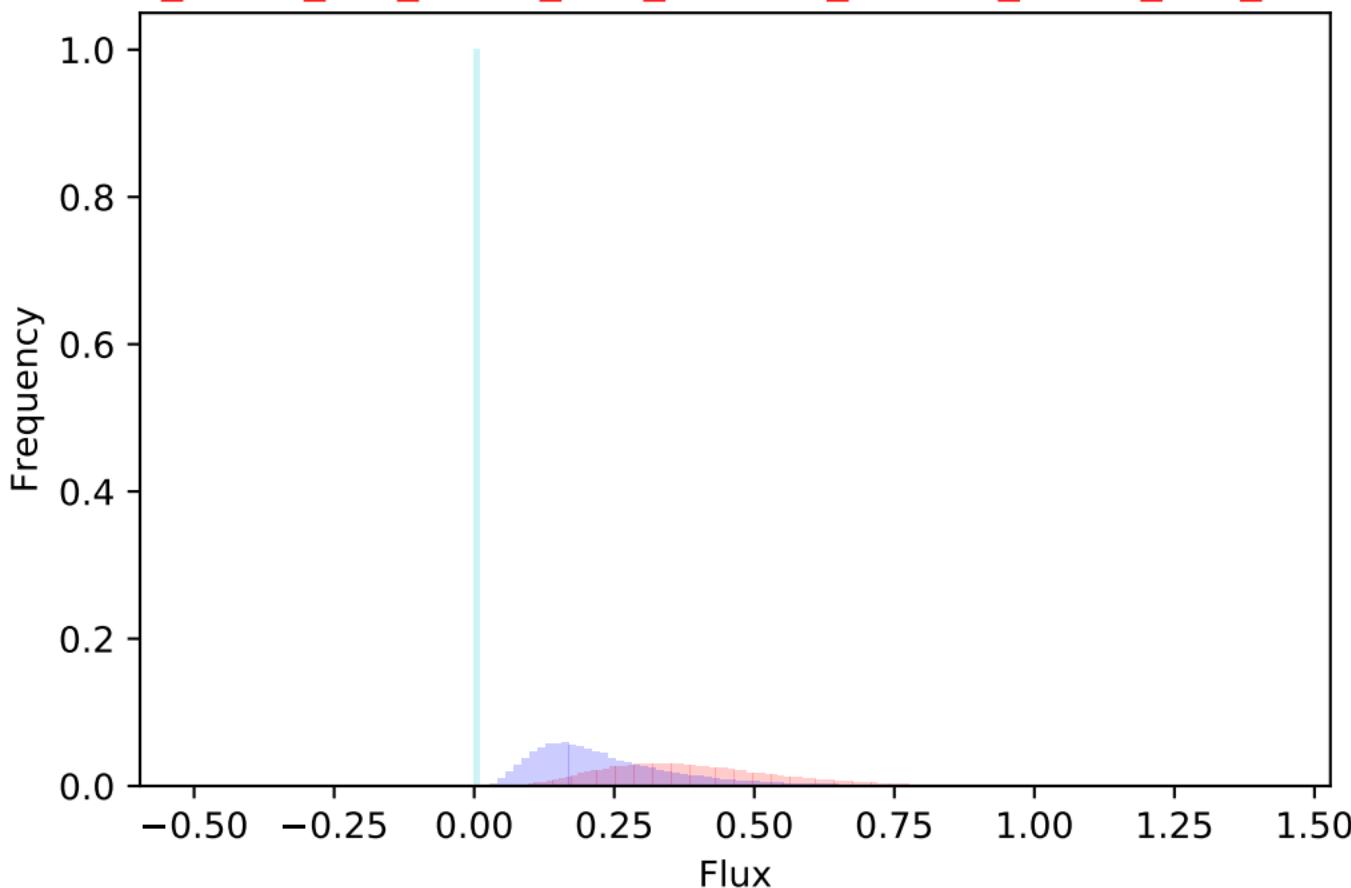


156 : ATP\_h + A\_DASH\_Glu\_h --> ADP\_h + A\_DASH\_GluP\_h

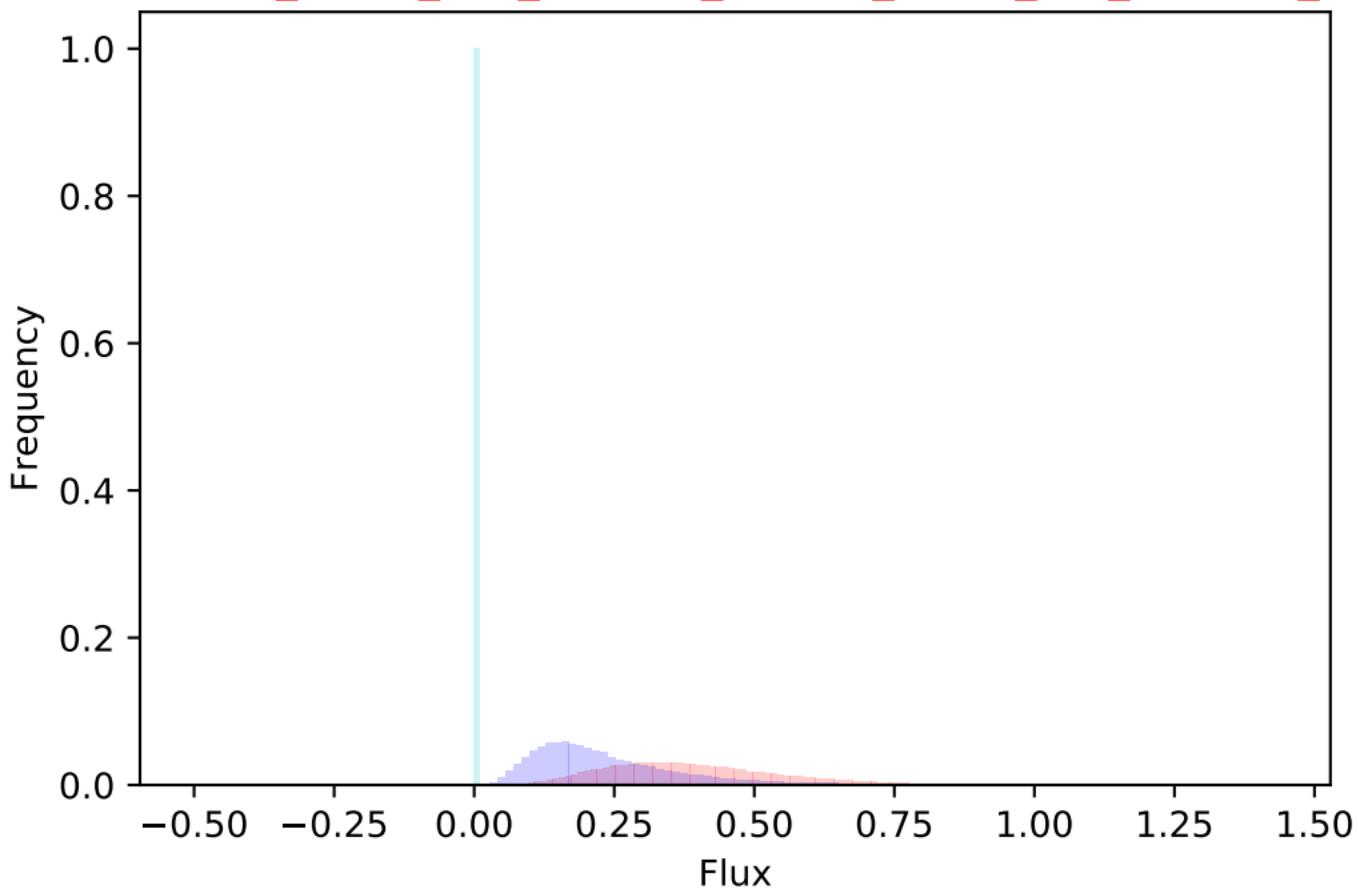


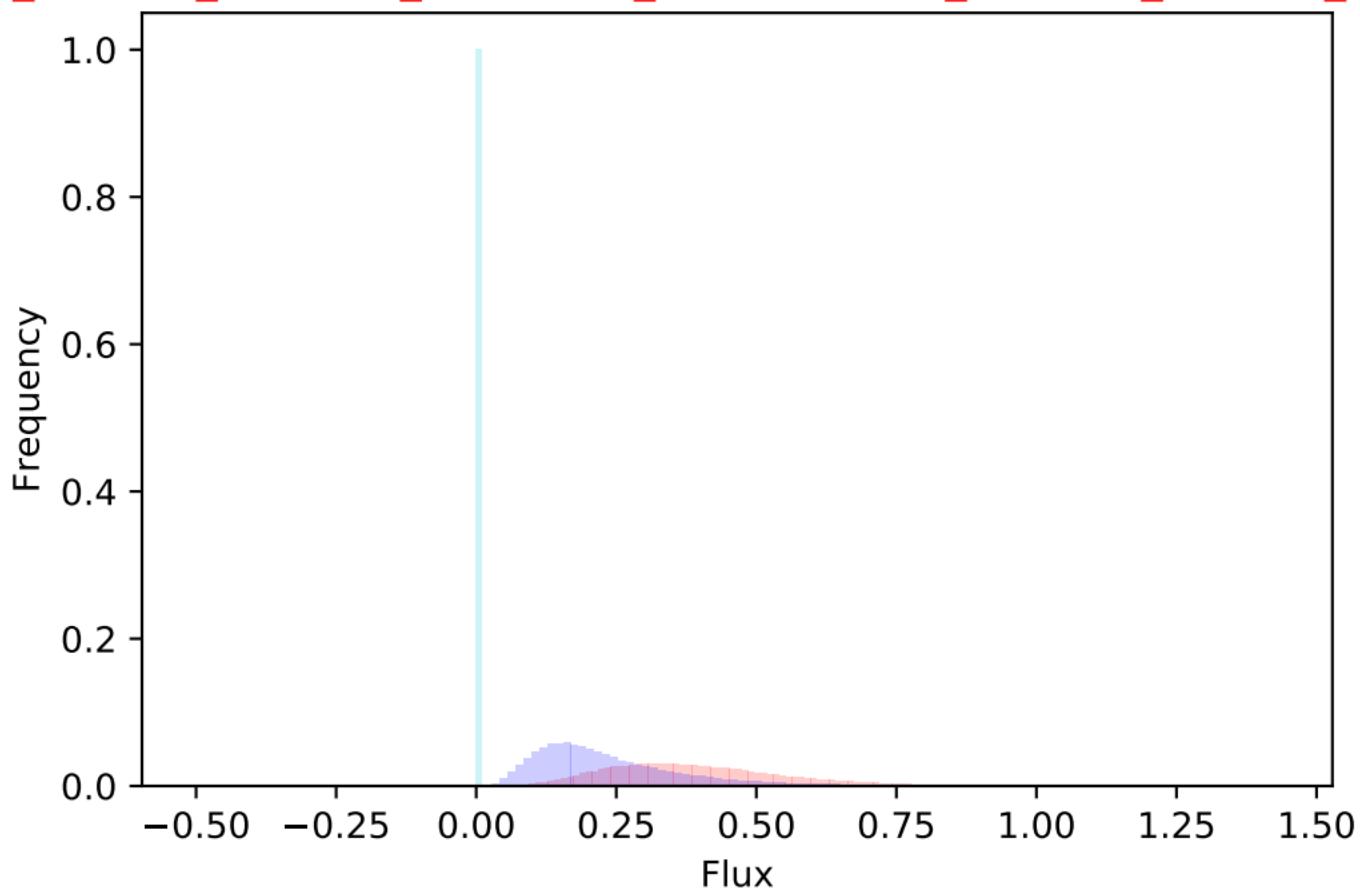


158 : A\_DASH\_Glu\_DASH\_SeA\_h + Glu\_h --> A\_DASH\_Orn\_h + KG\_h

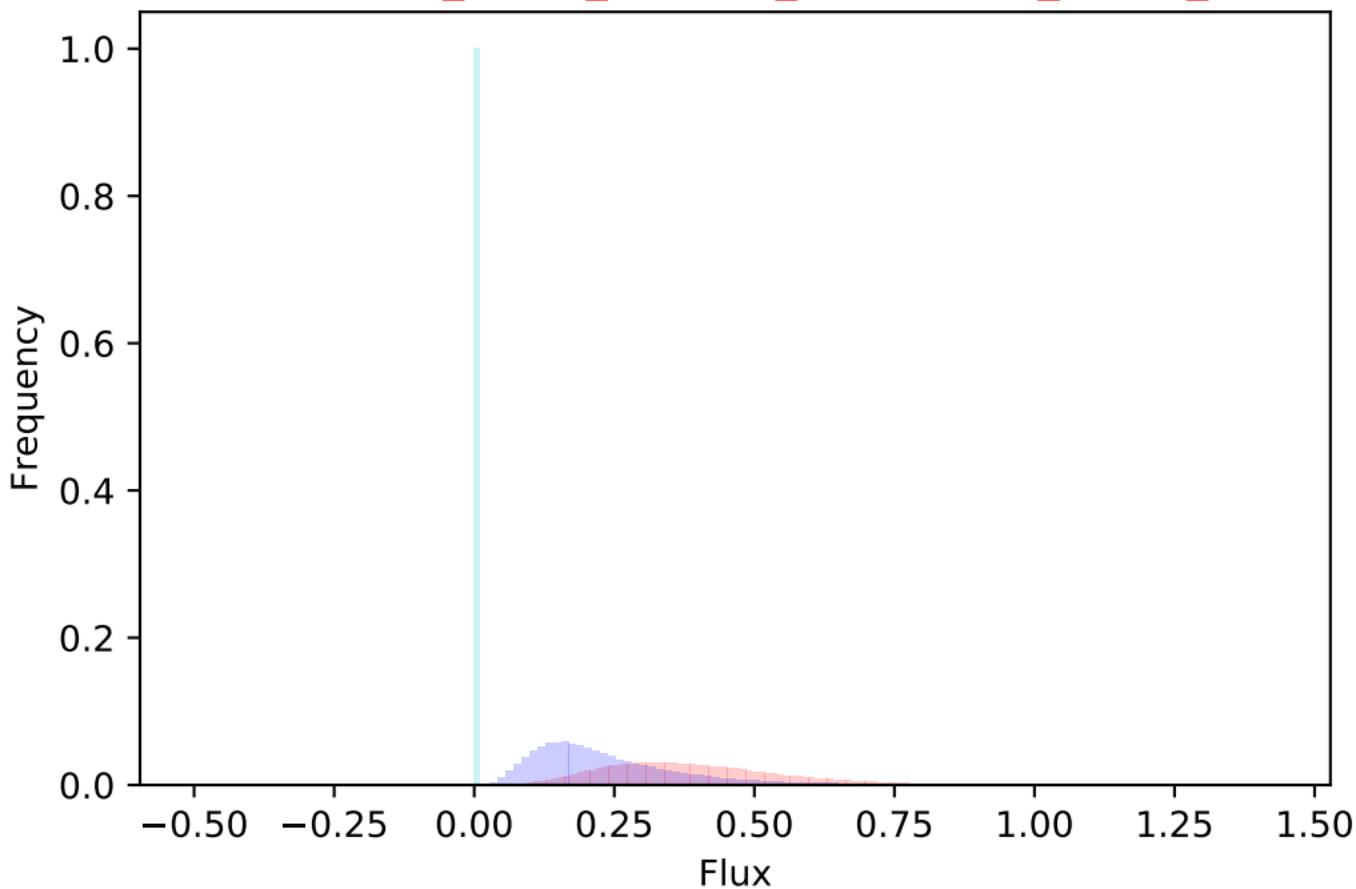


159 : A\_DASH\_Orn\_h + Glu\_h --> A\_DASH\_Glu\_h + Orn\_h

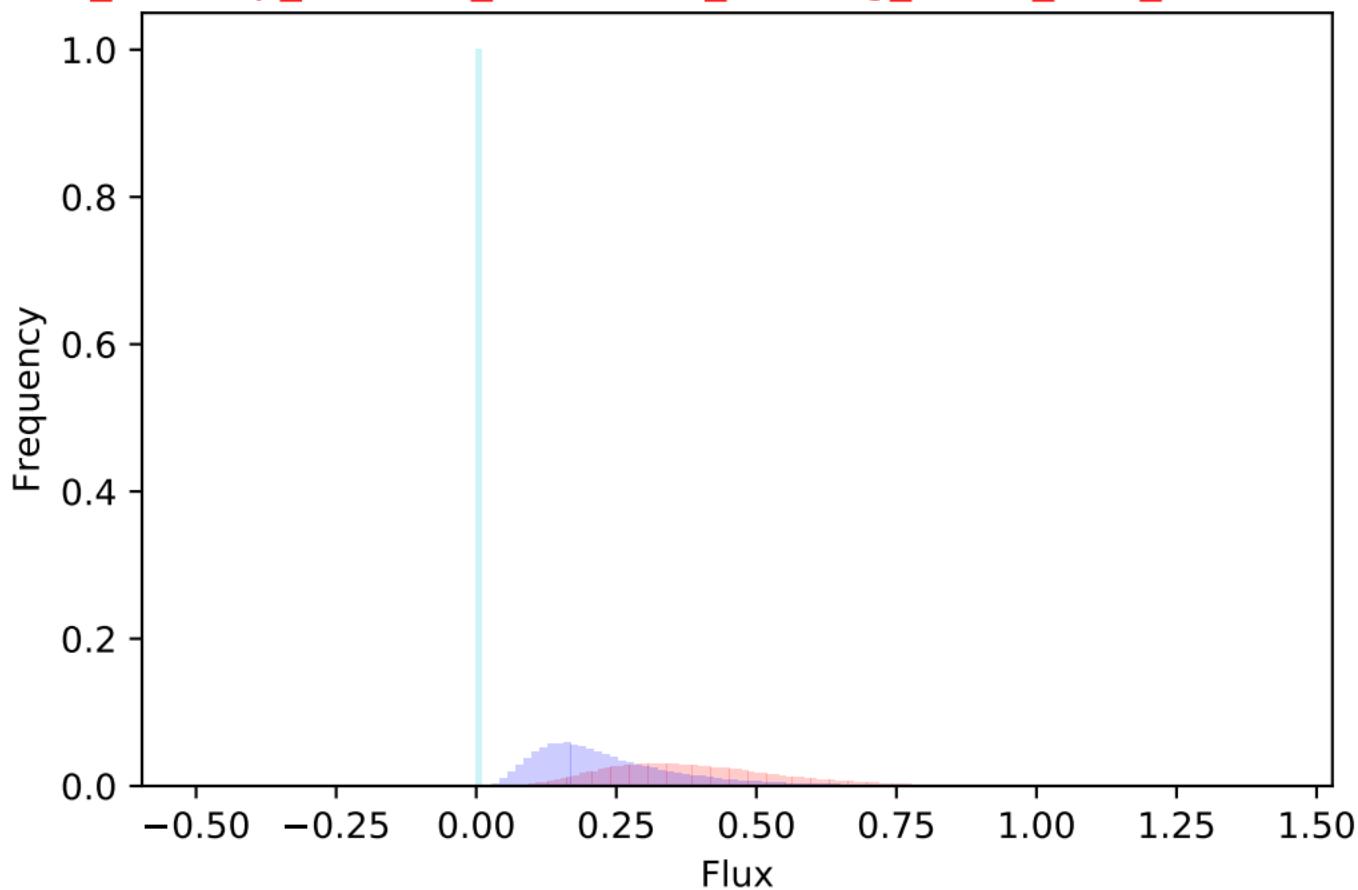




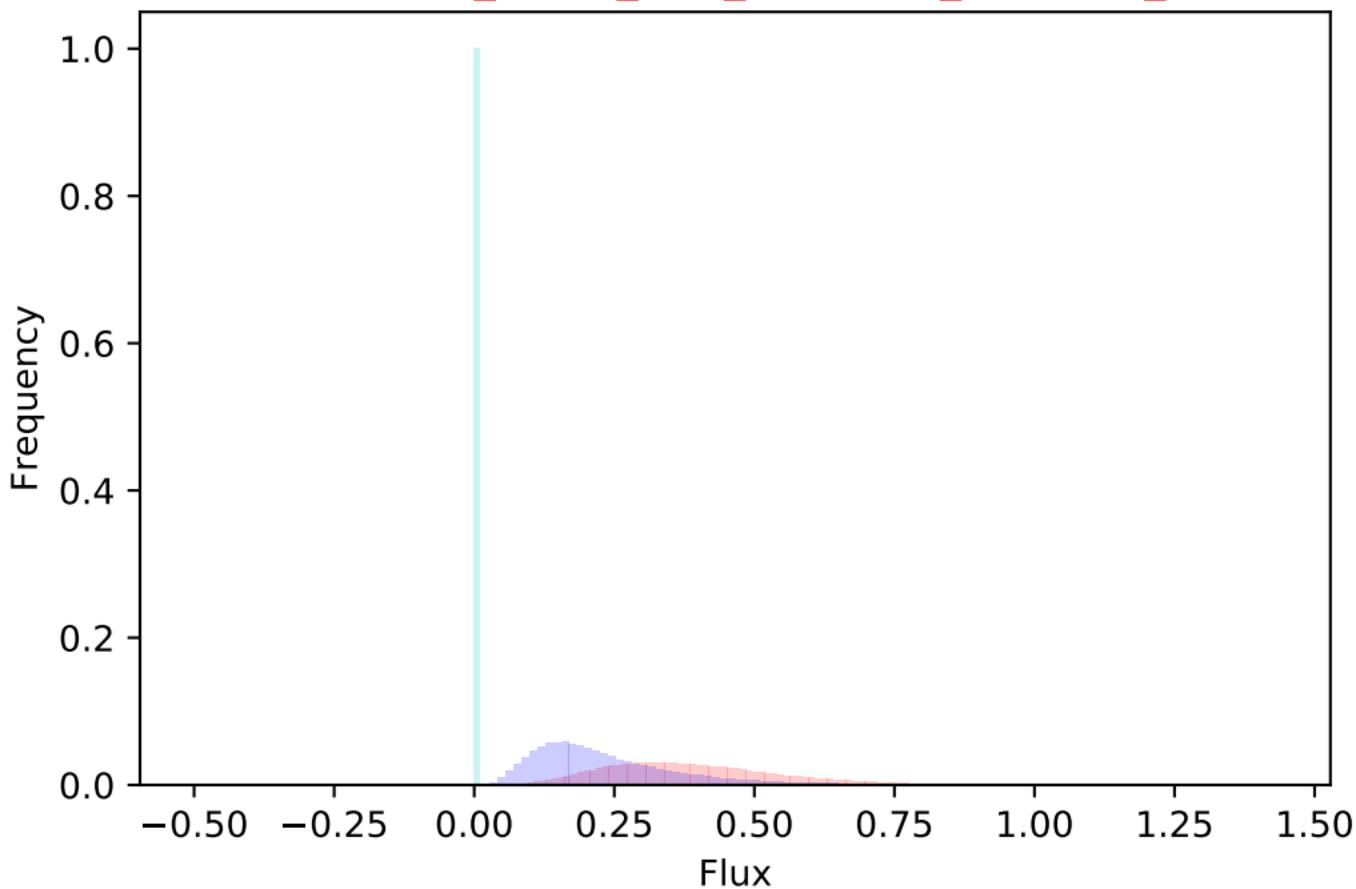
161 : CBP\_h + H\_h + Orn\_h <=> CTL\_h + Pi\_h



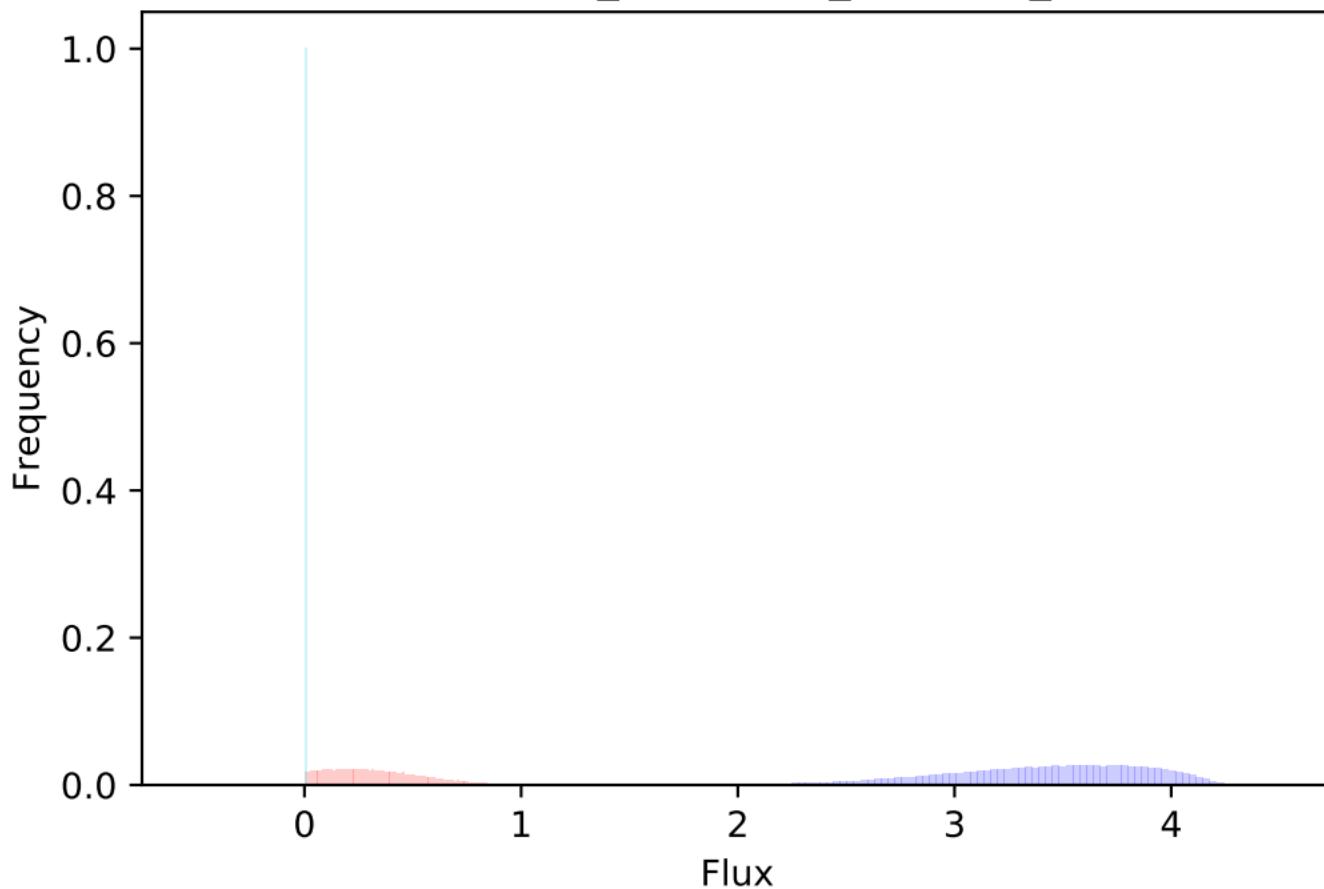
2 : ATP\_h + Asp\_h + CTL\_h --> AMP\_h + Arg\_DASH\_SCA\_h + 3.0 H\_h + P\_h

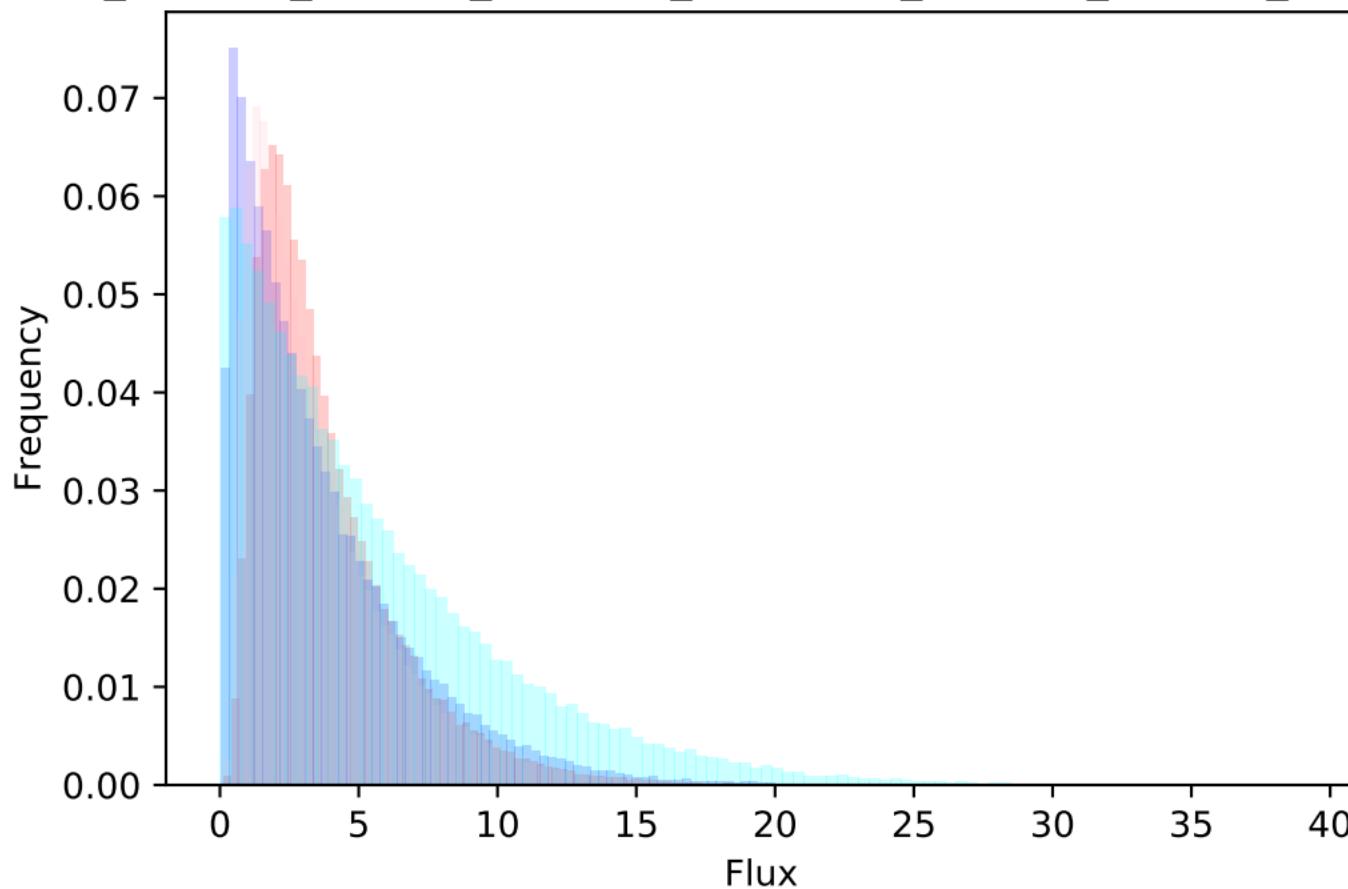
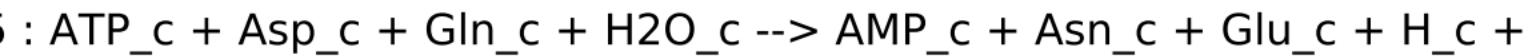


163 : Arg\_DASH\_SCA\_h --> Arg\_h + Fum\_h

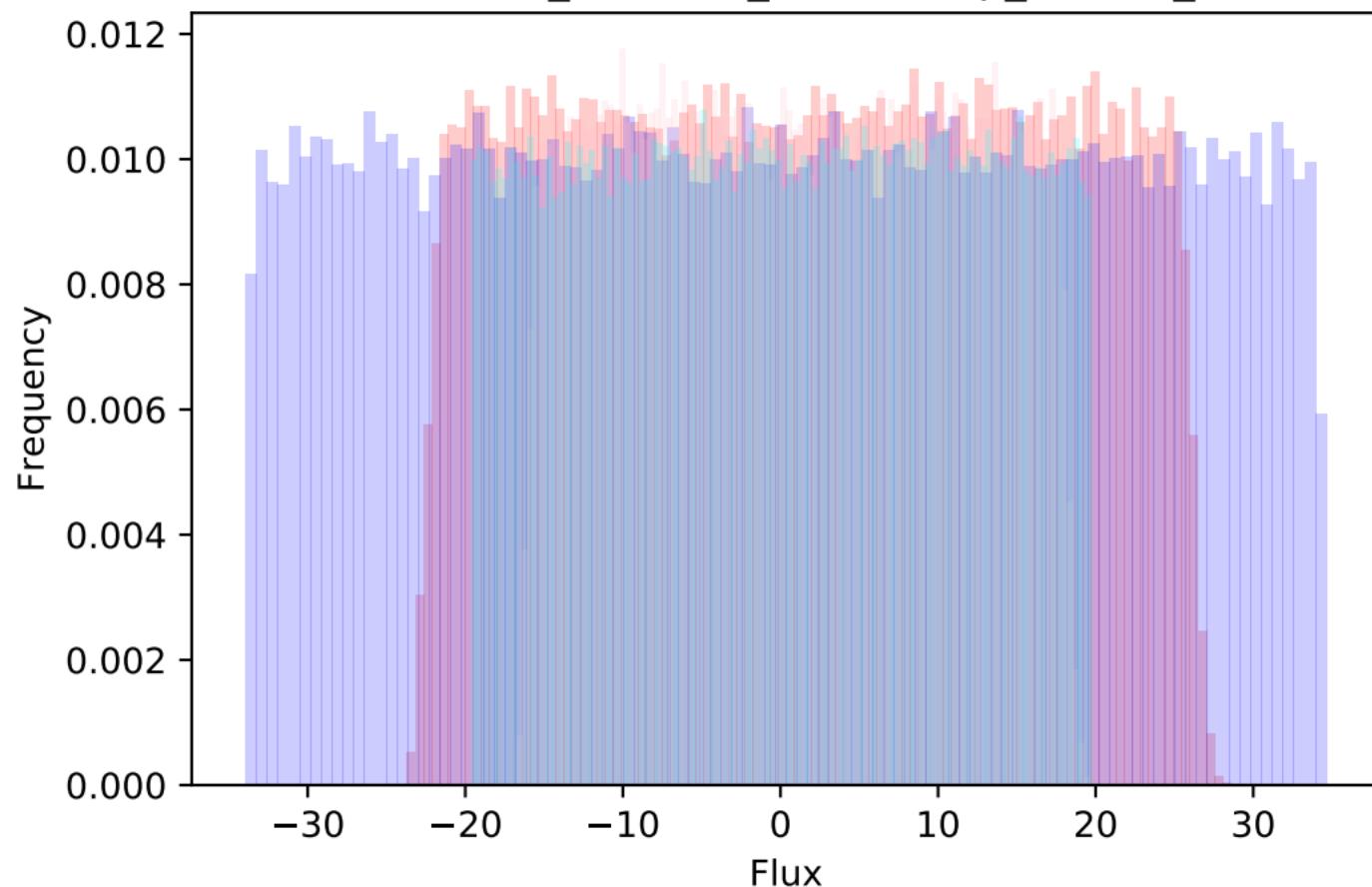


164 : Mal\_c --> Fum\_c + H2O\_c

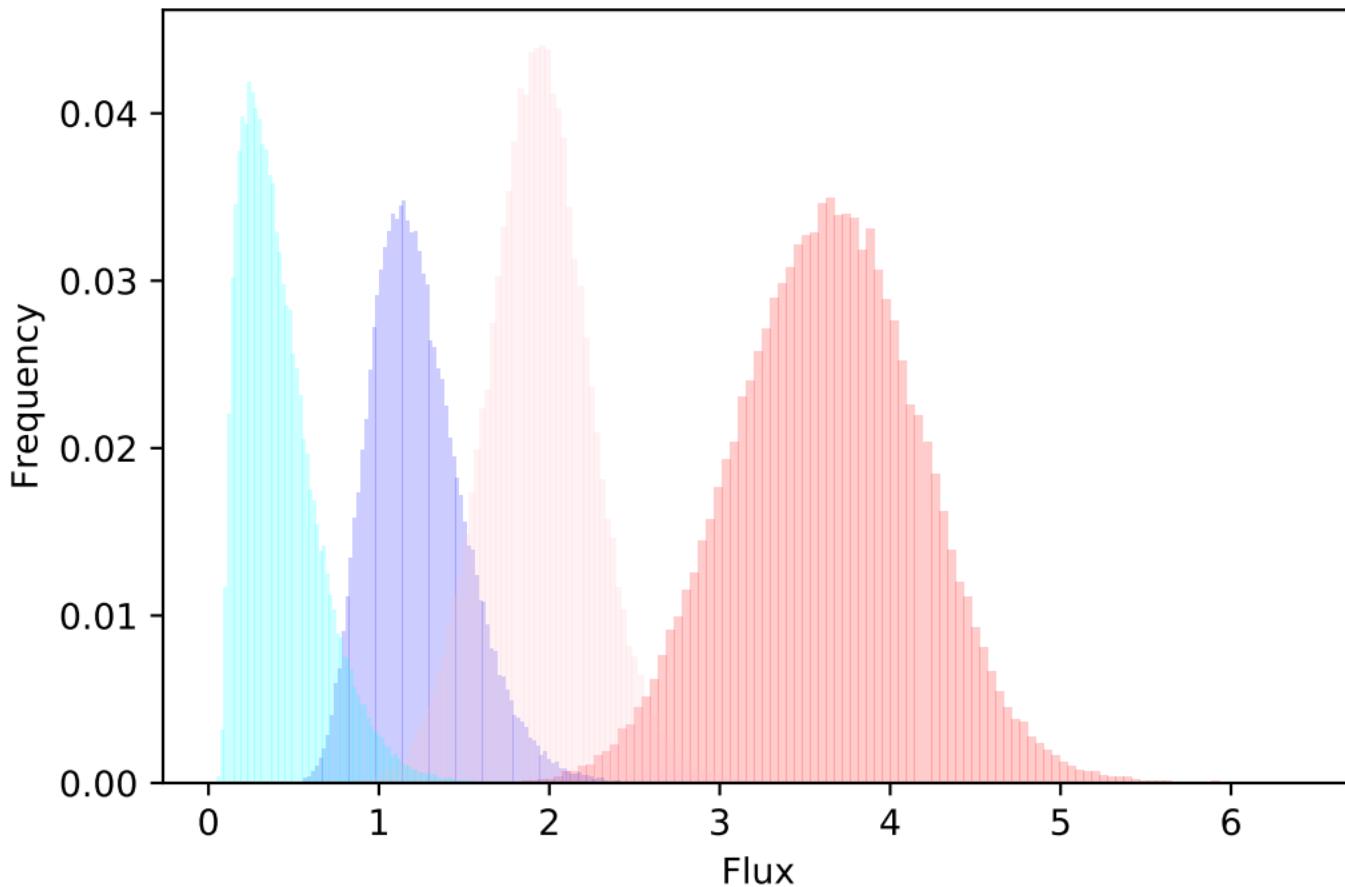




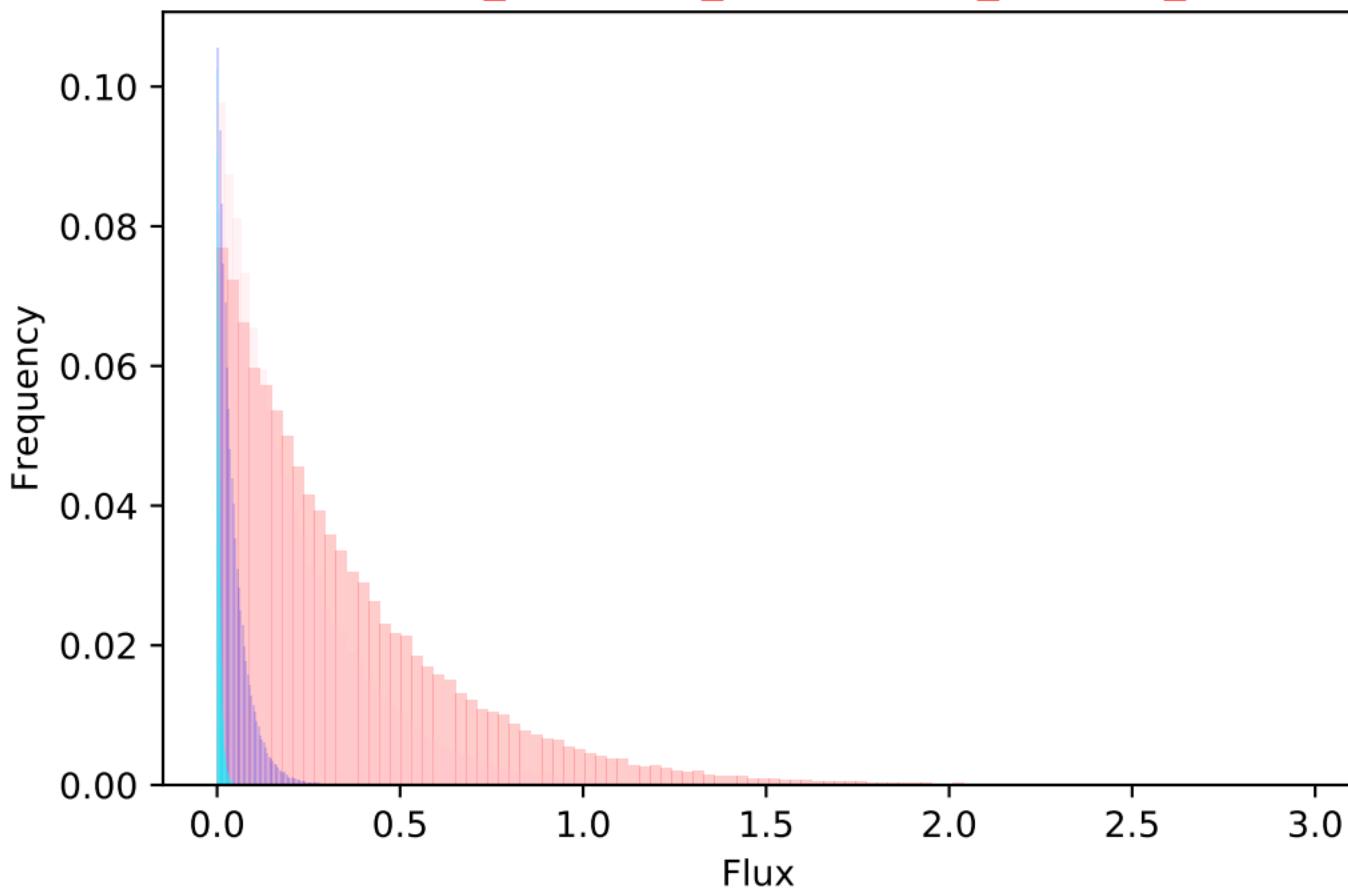
166 : Glu\_c + OAA\_c <=> Asp\_c + KG\_c

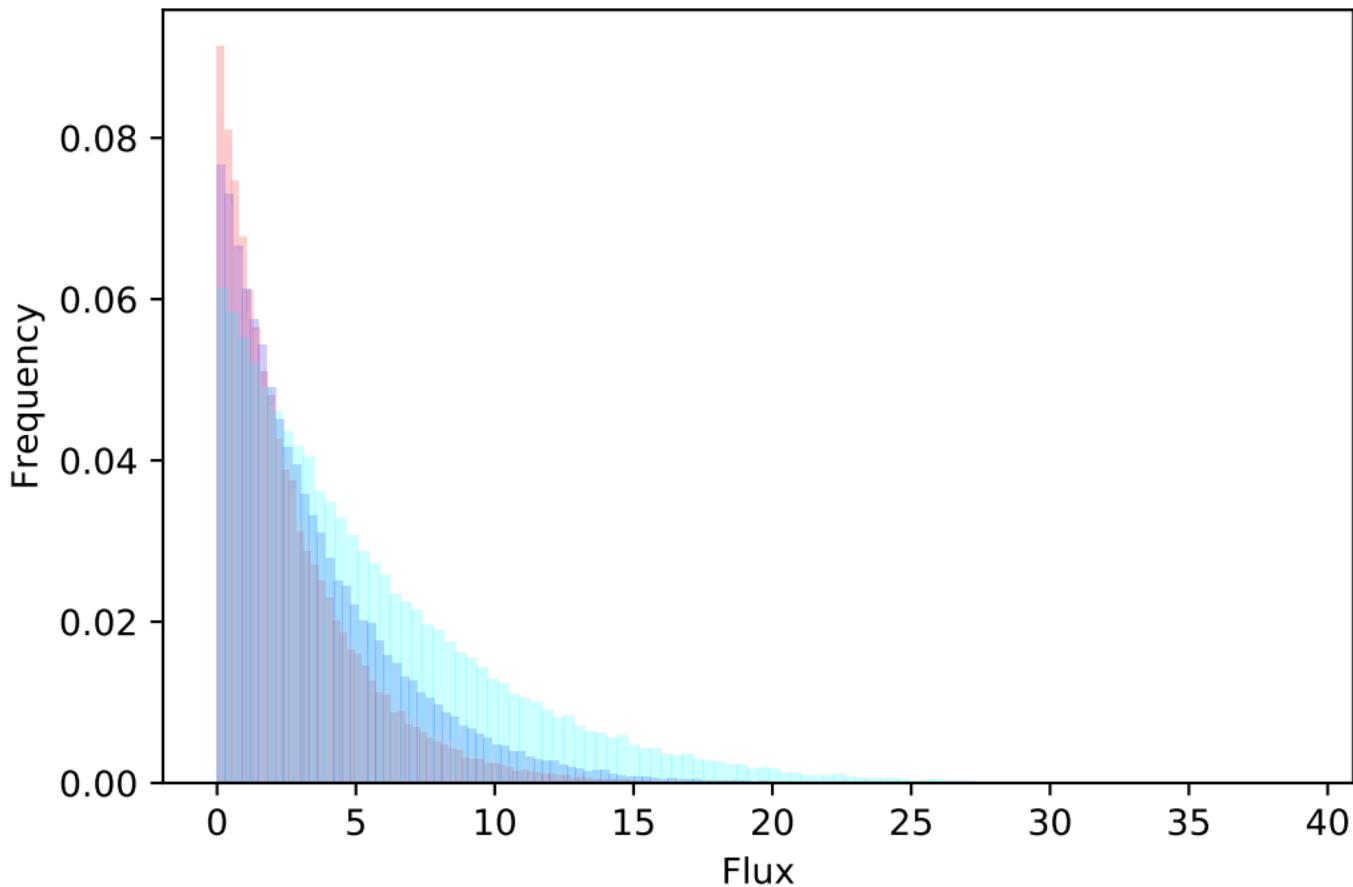


167 : Glu\_h + OAA\_h <=> Asp\_h + KG\_h

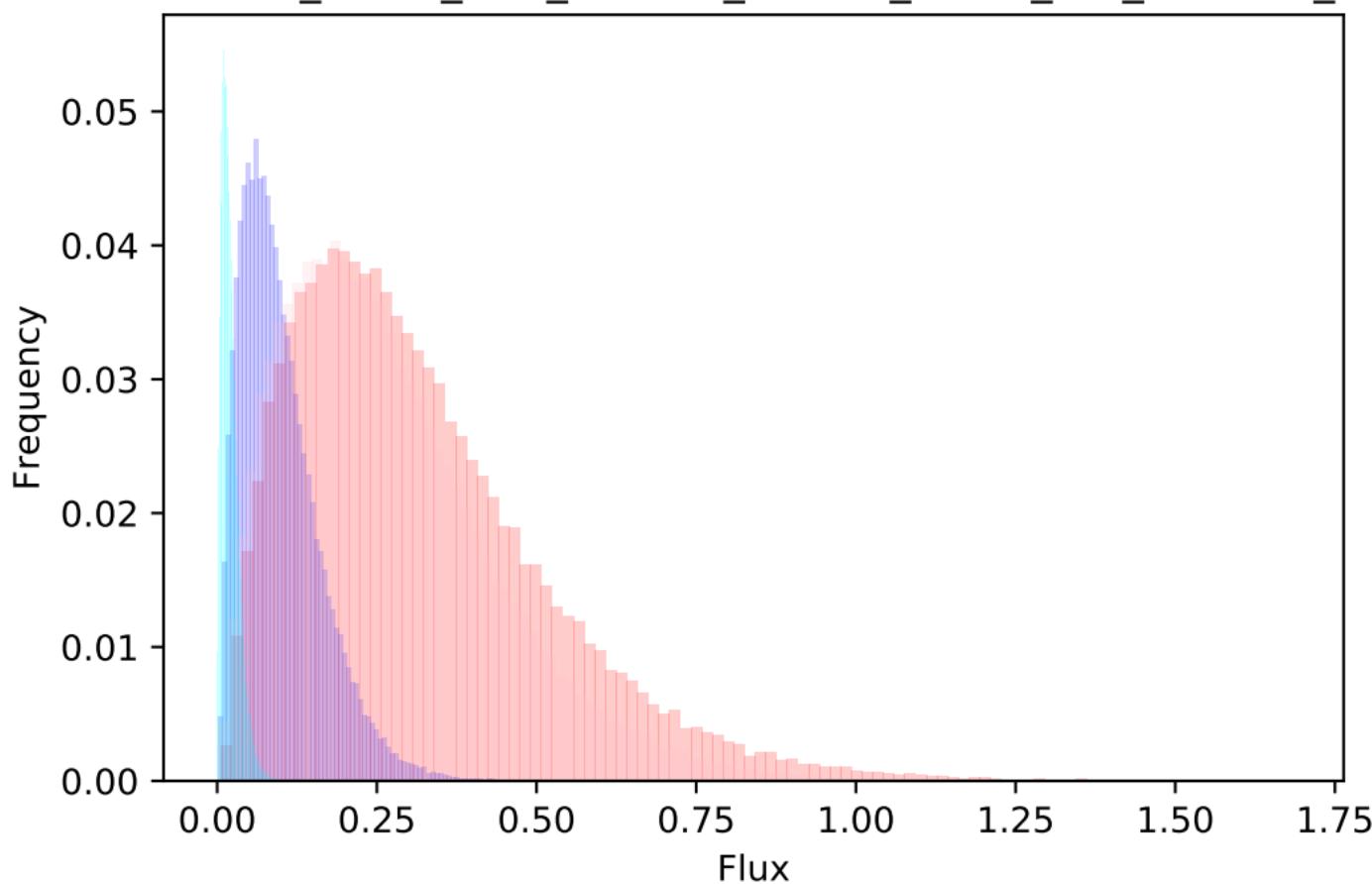


168 : Glu\_m + OAA\_m <=> Asp\_m + KG\_m

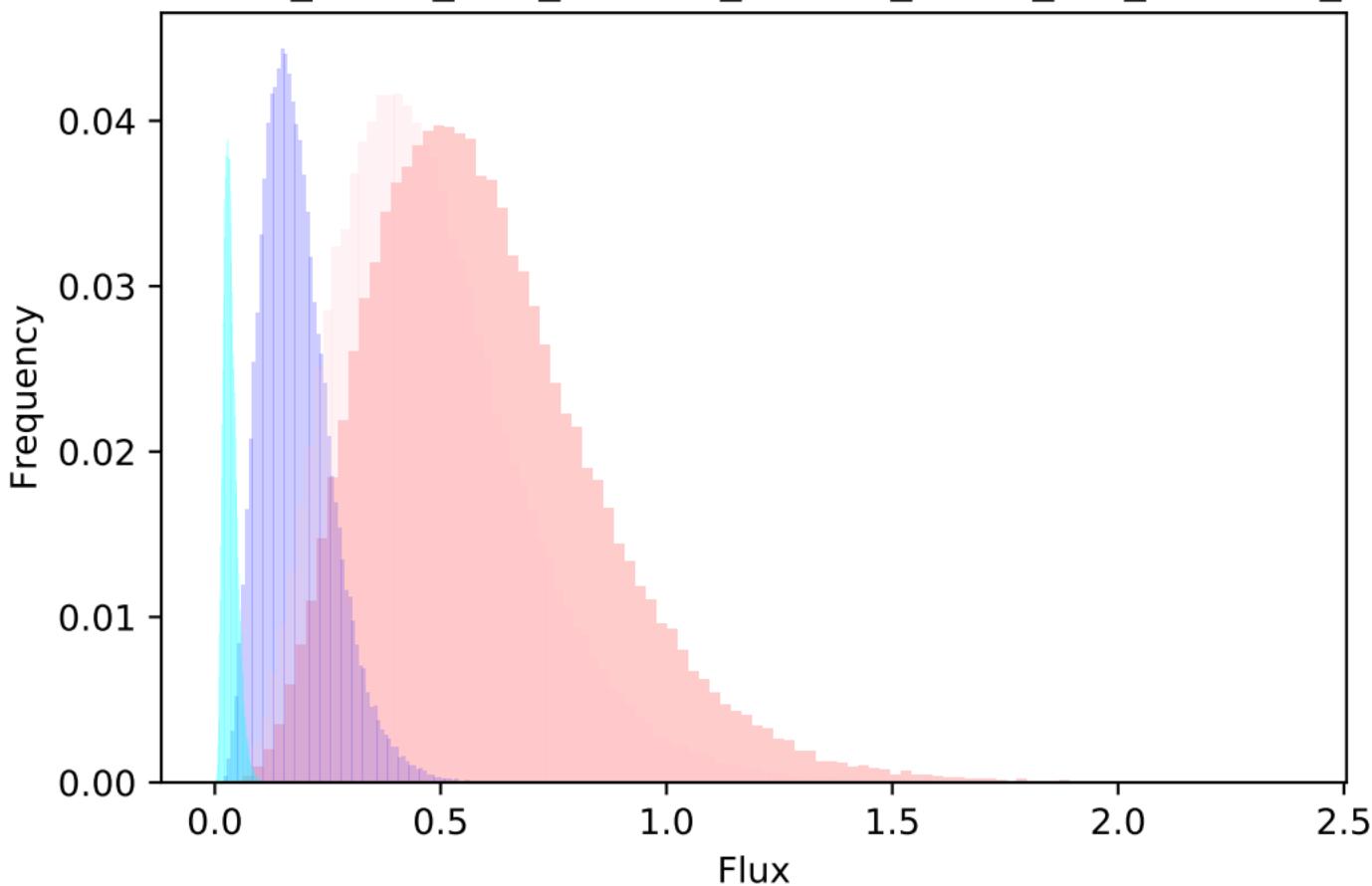




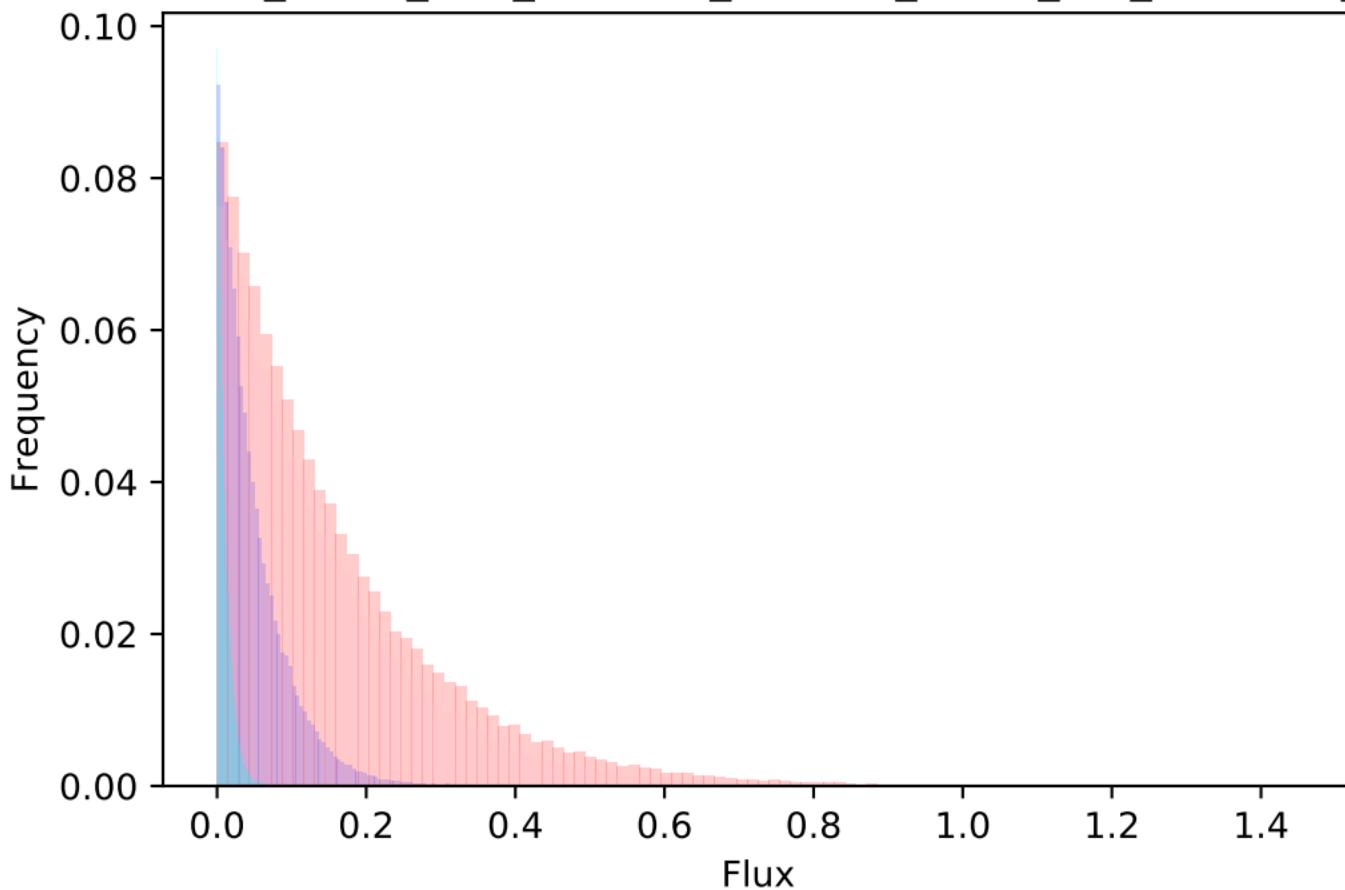
171 : A\_DASH\_CoA\_c + Ser\_c --> A\_DASH\_Ser\_c + CoA\_c



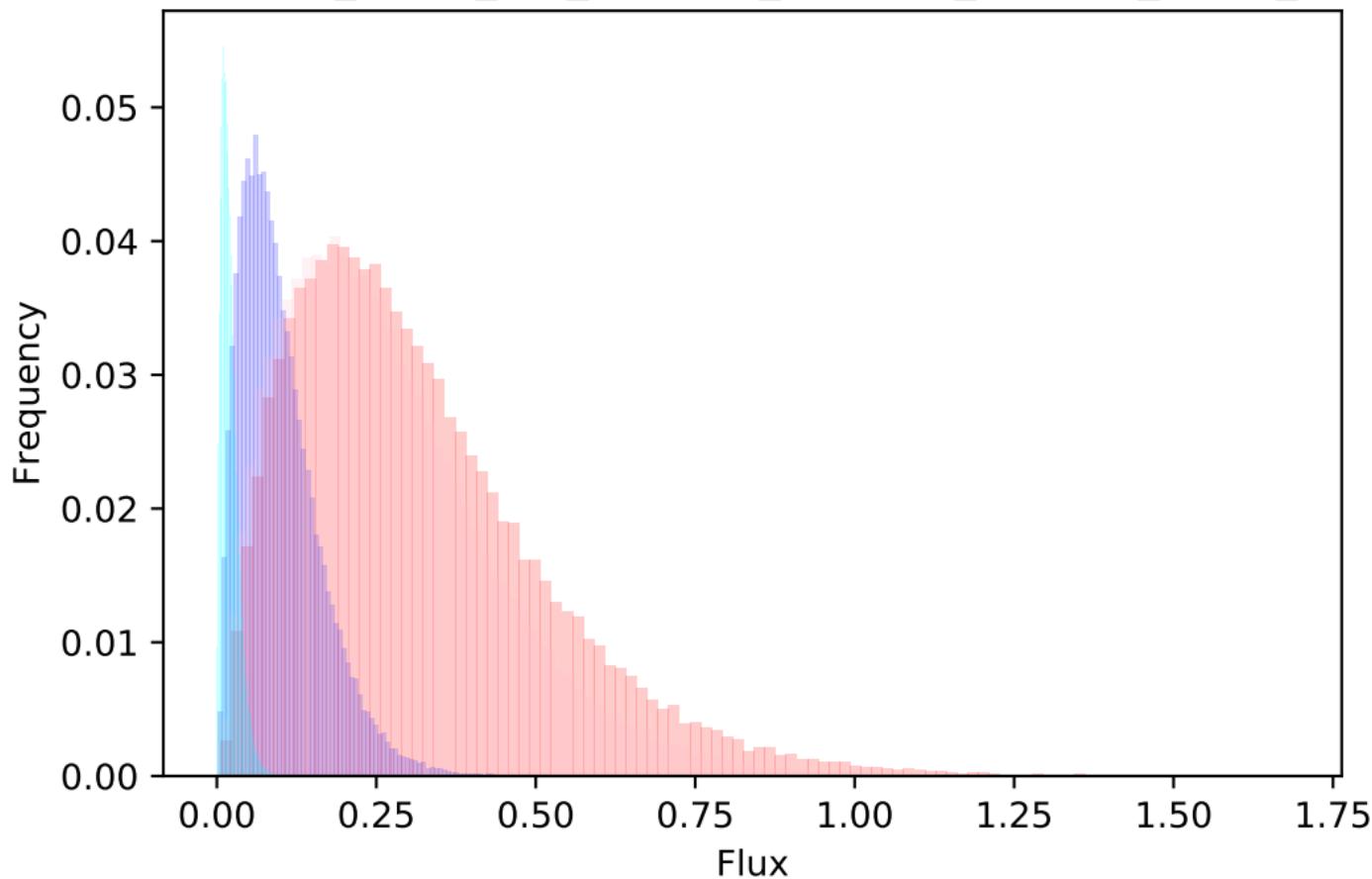
172 : A\_DASH\_CoA\_h + Ser\_h --> A\_DASH\_Ser\_h + CoA\_h



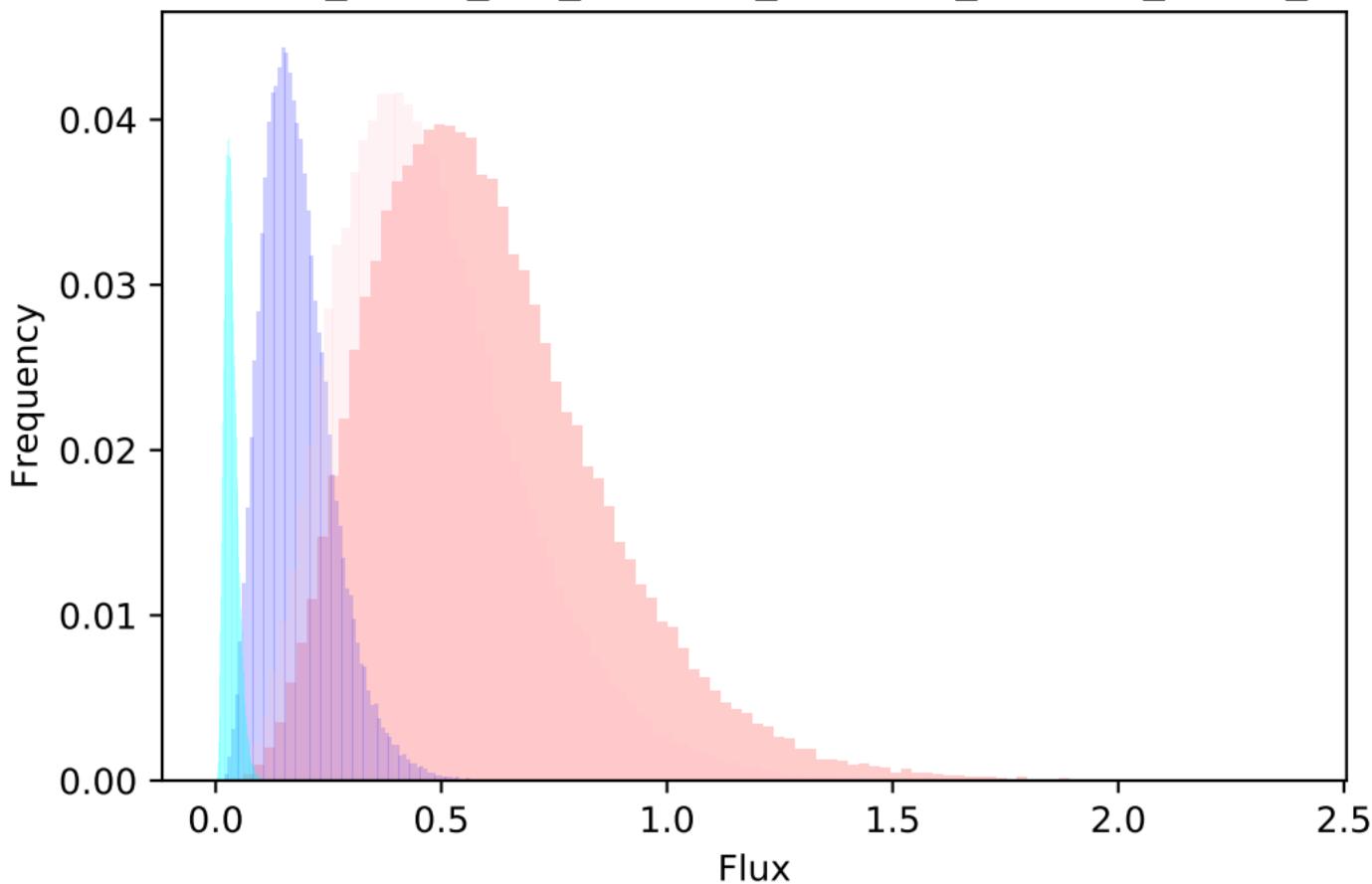
173 : A\_DASH\_CoA\_m + Ser\_m --> A\_DASH\_Ser\_m + CoA\_m



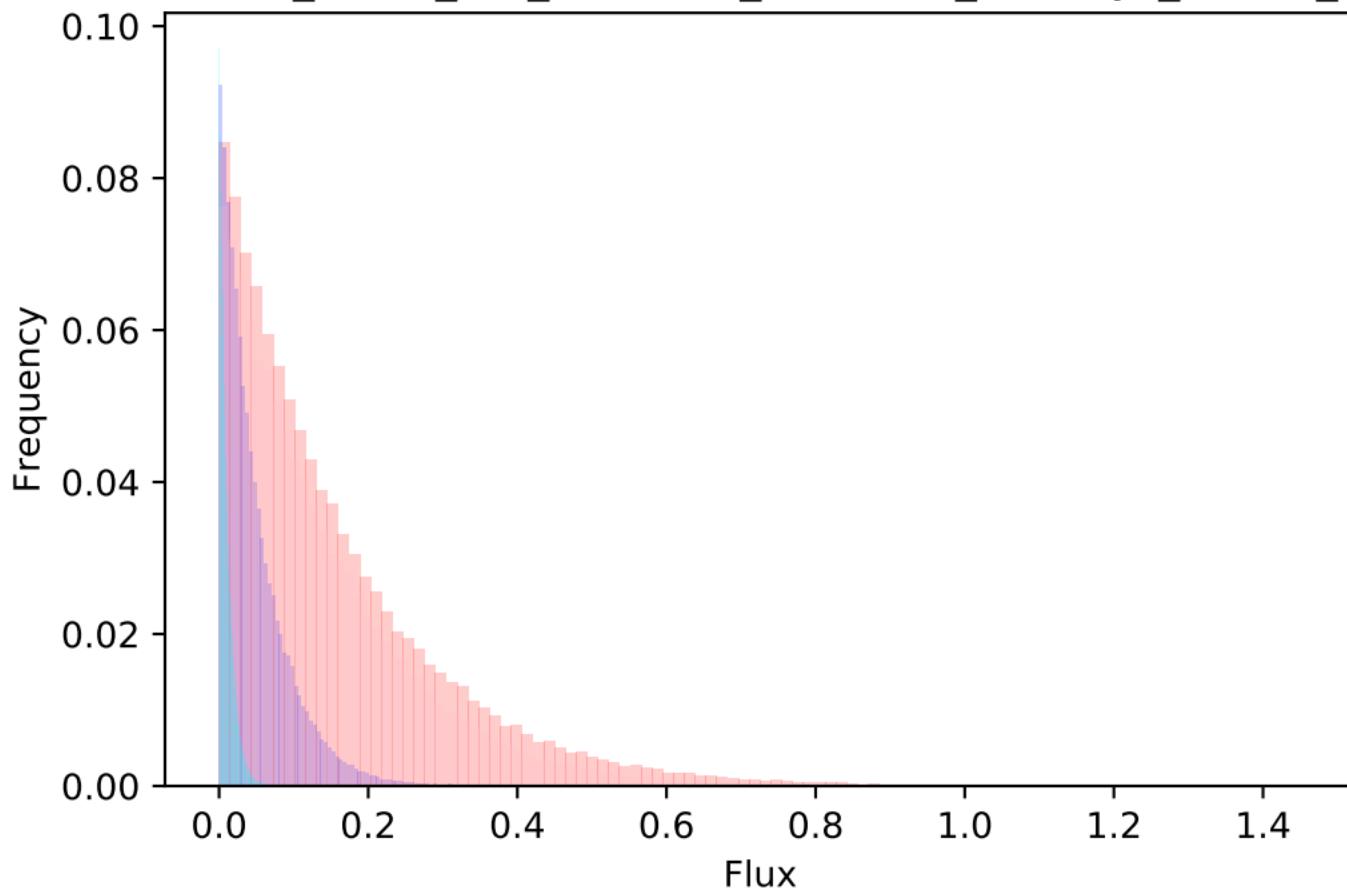
174 : A\_DASH\_Ser\_c + H2S\_c  $\rightarrow$  AC\_c + Cys\_c + H\_c



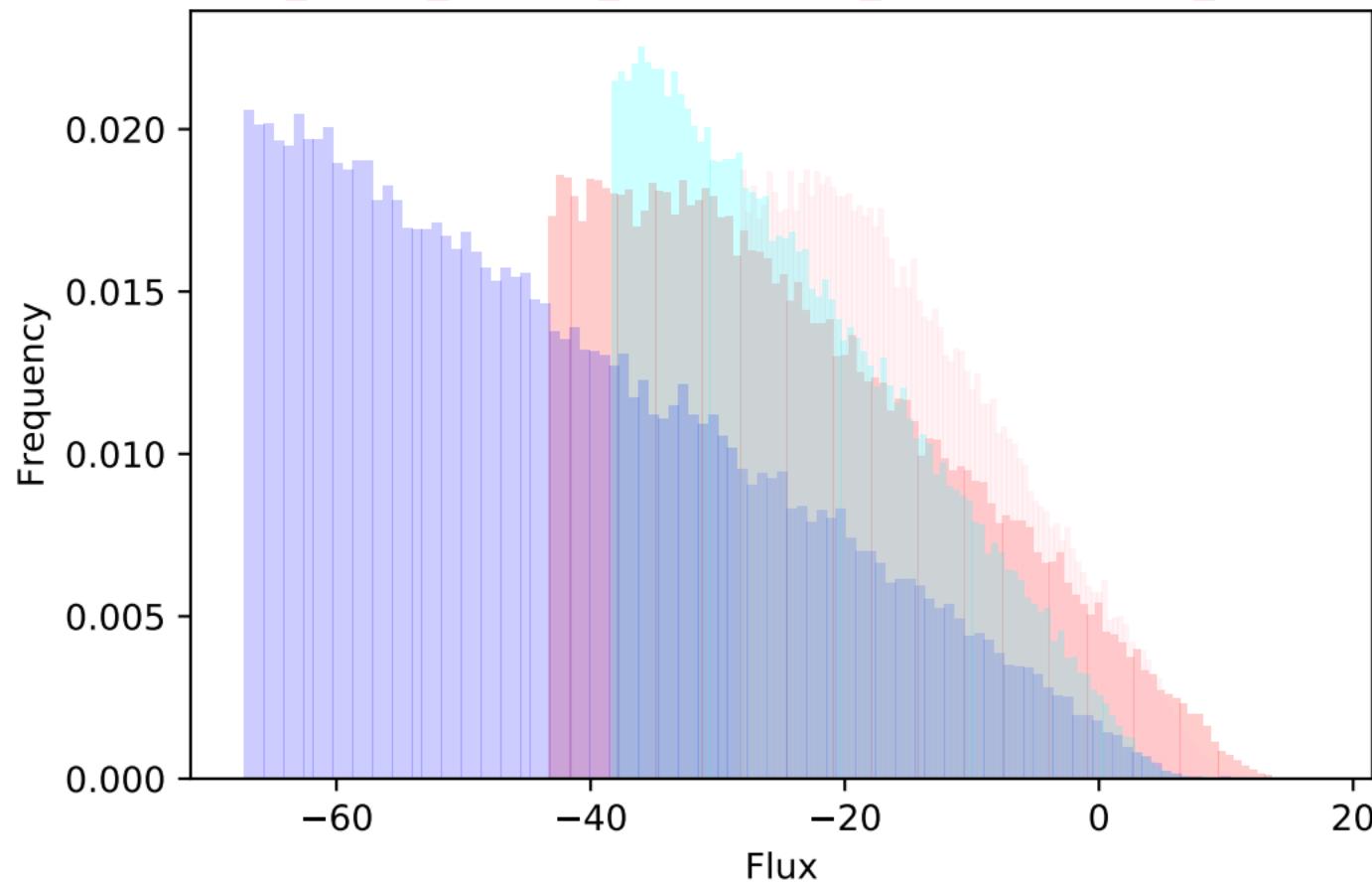
175 : A\_DASH\_Ser\_h + H2S\_h  $\rightarrow$  AC\_h + Cys\_h + H\_h

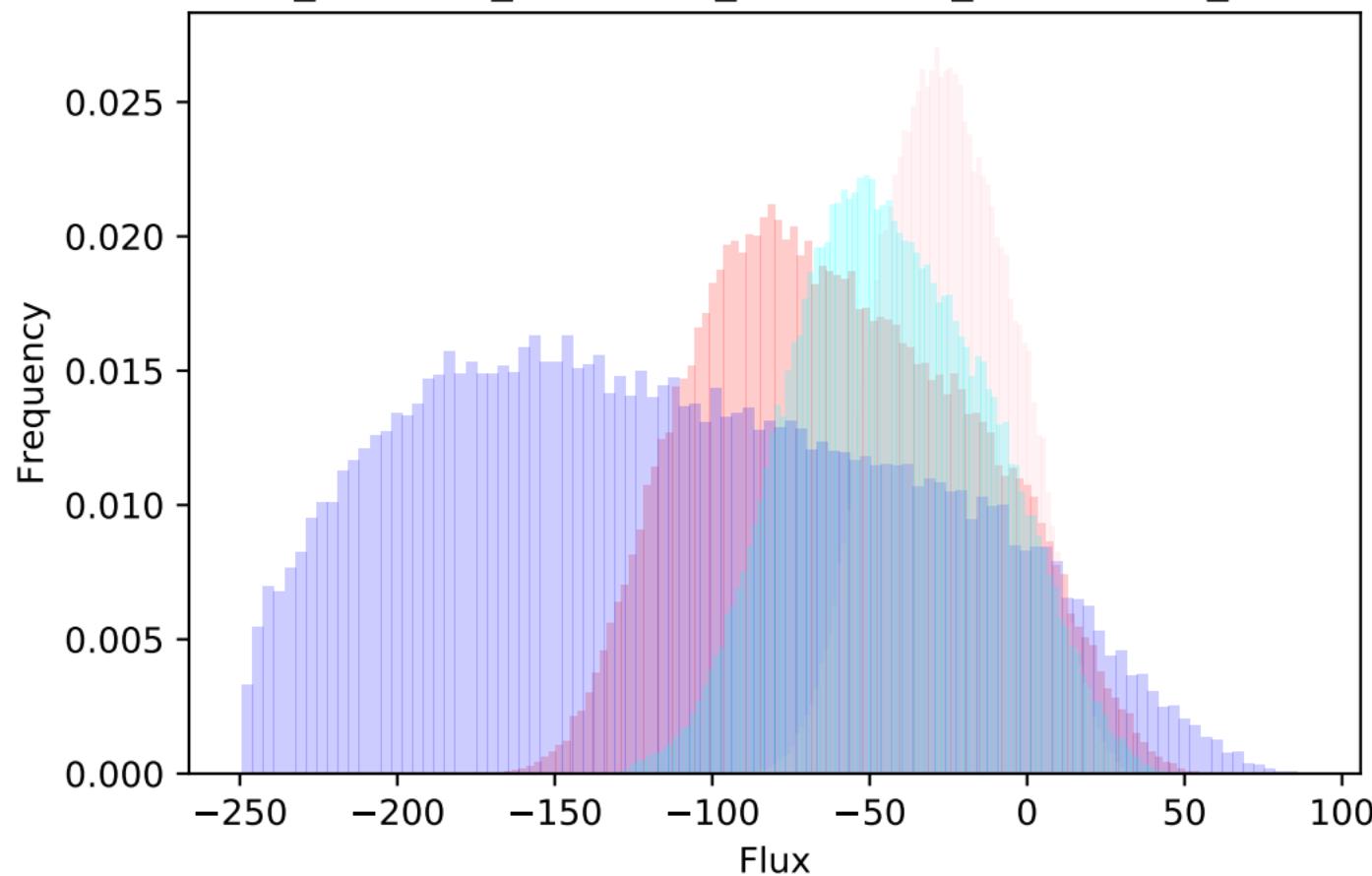
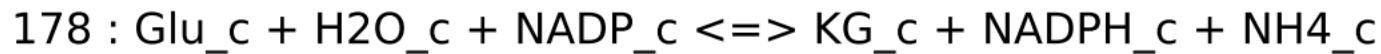


176 : A\_DASH\_Ser\_m + H2S\_m --> AC\_m + Cys\_m + H\_m

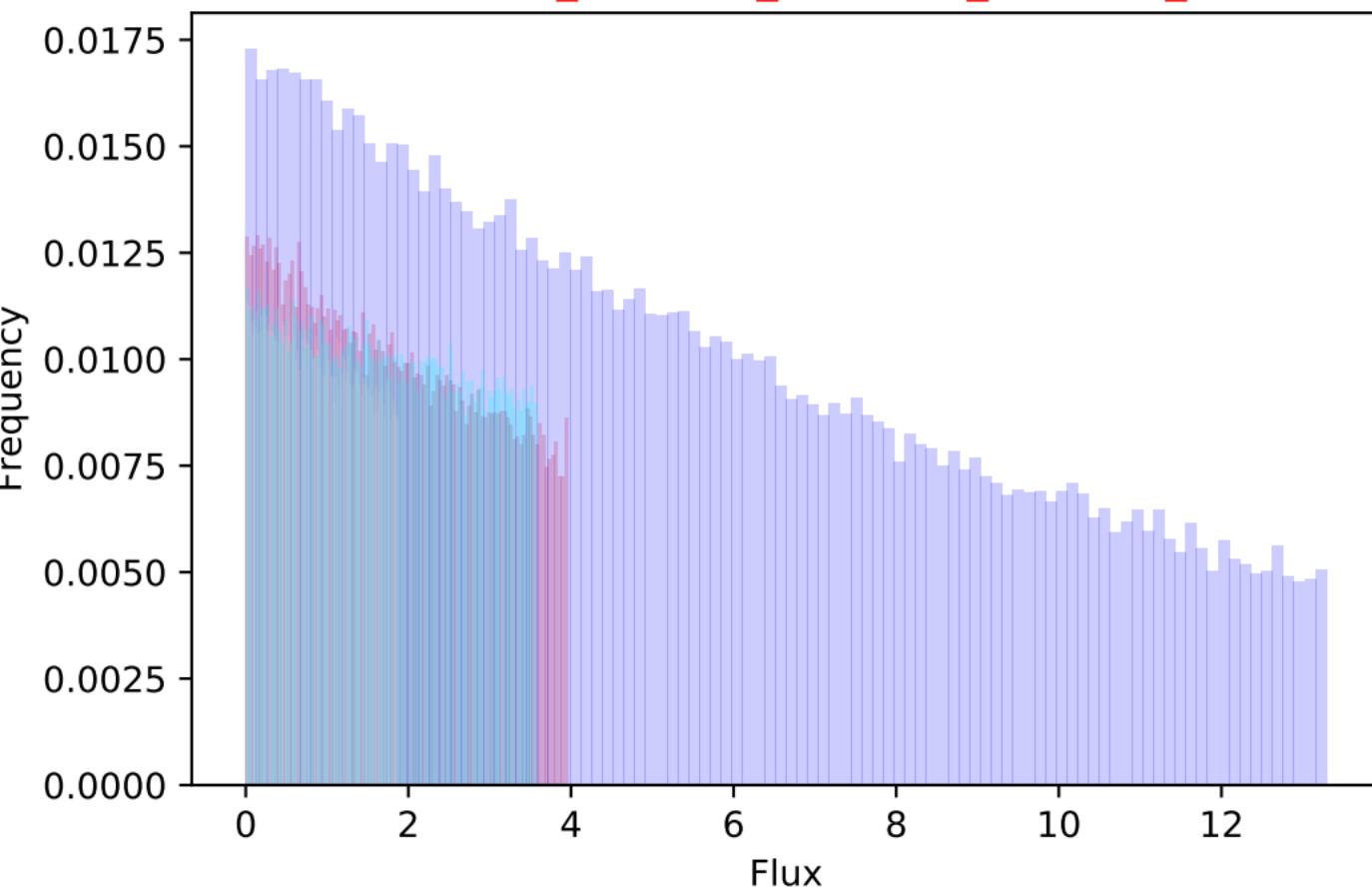


177 : Gln\_h + H\_h + KG\_h + NADPH\_h <=> 2.0 Glu\_h + NADP\_h

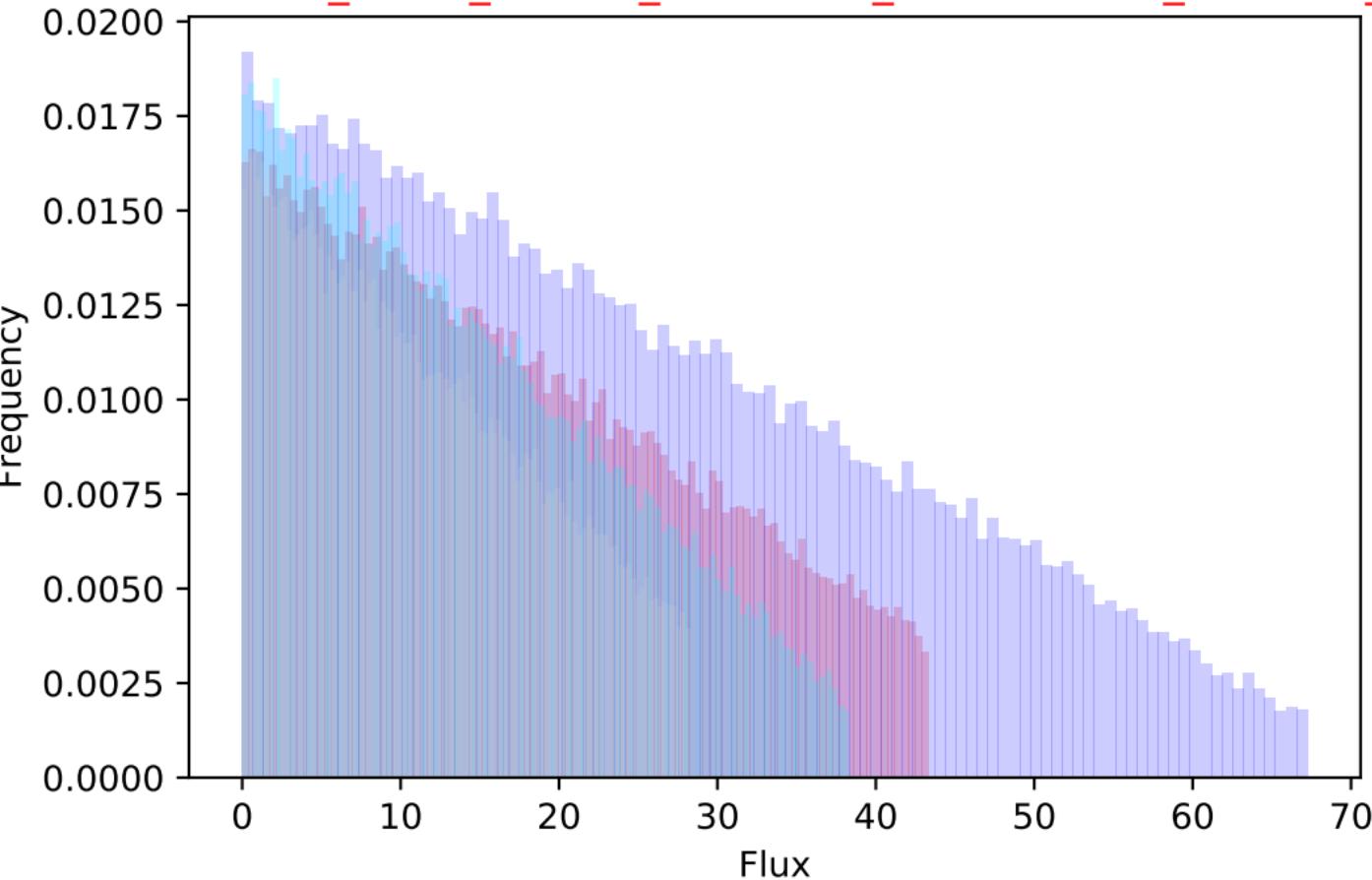




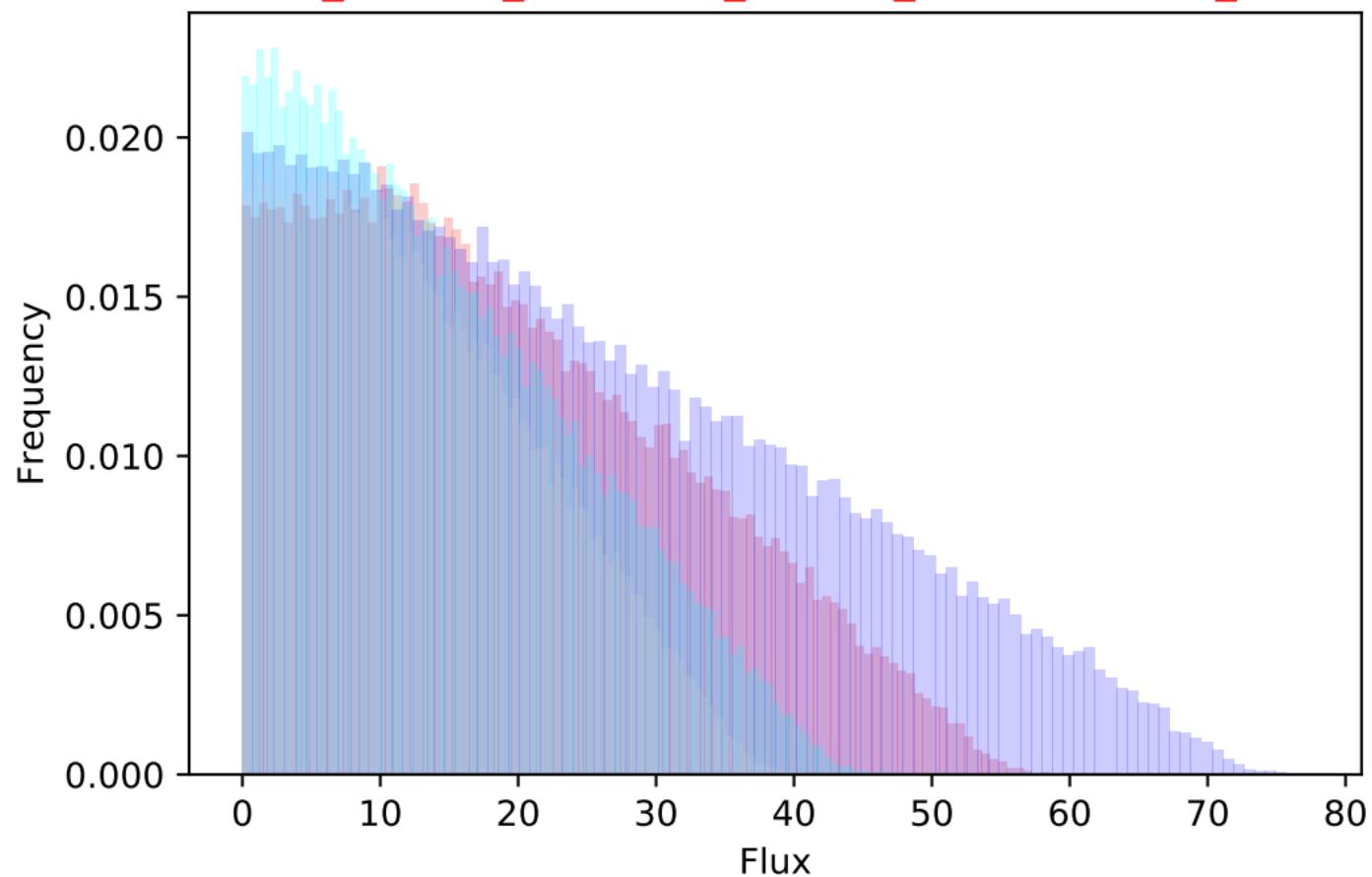
179 : Gln\_c + H2O\_c --> Glu\_c + NH4\_c

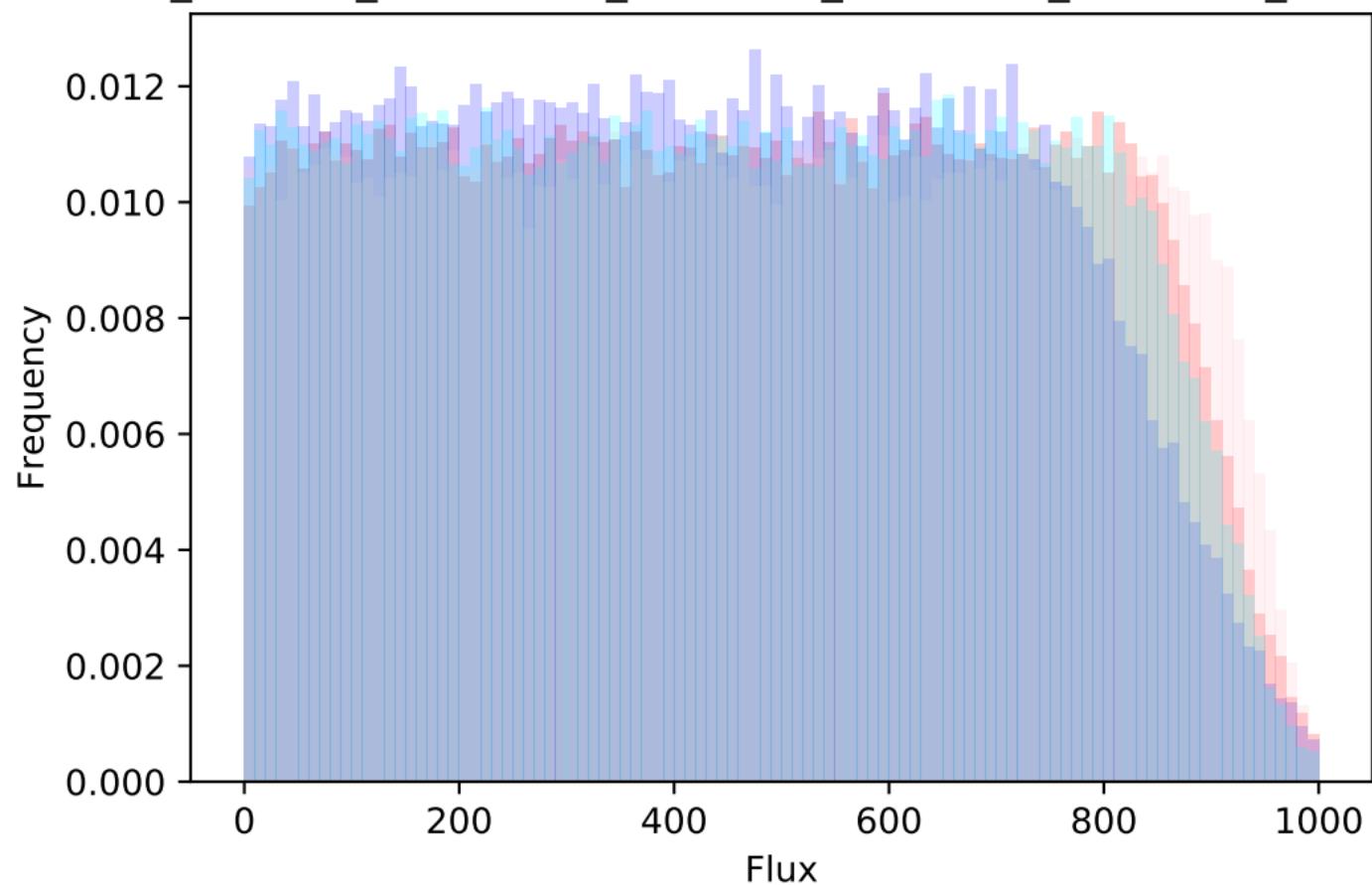


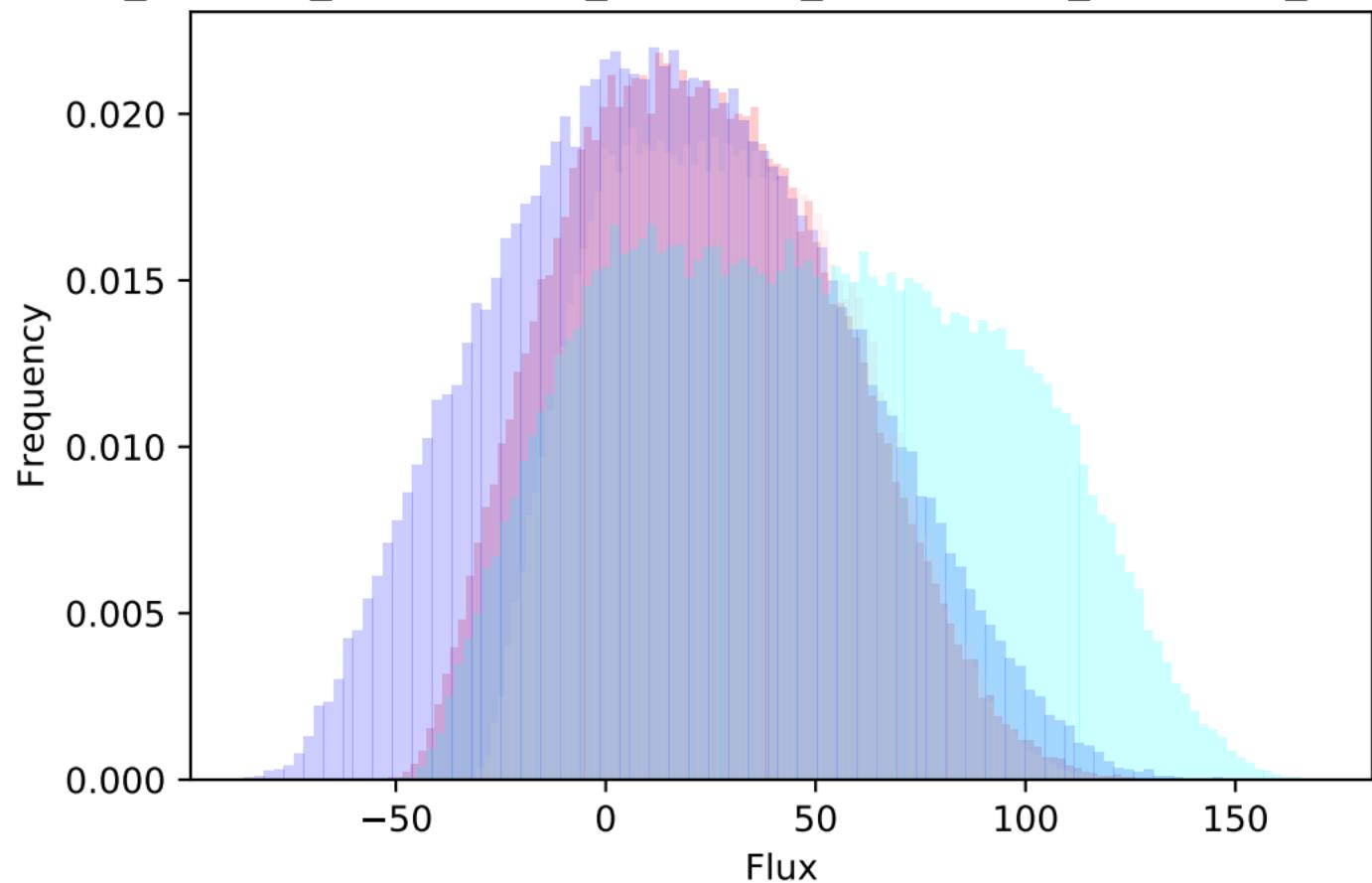
180 : Gln\_h + H\_h + KG\_h + NADH\_h --> 2.0 Glu\_h + NAD\_h

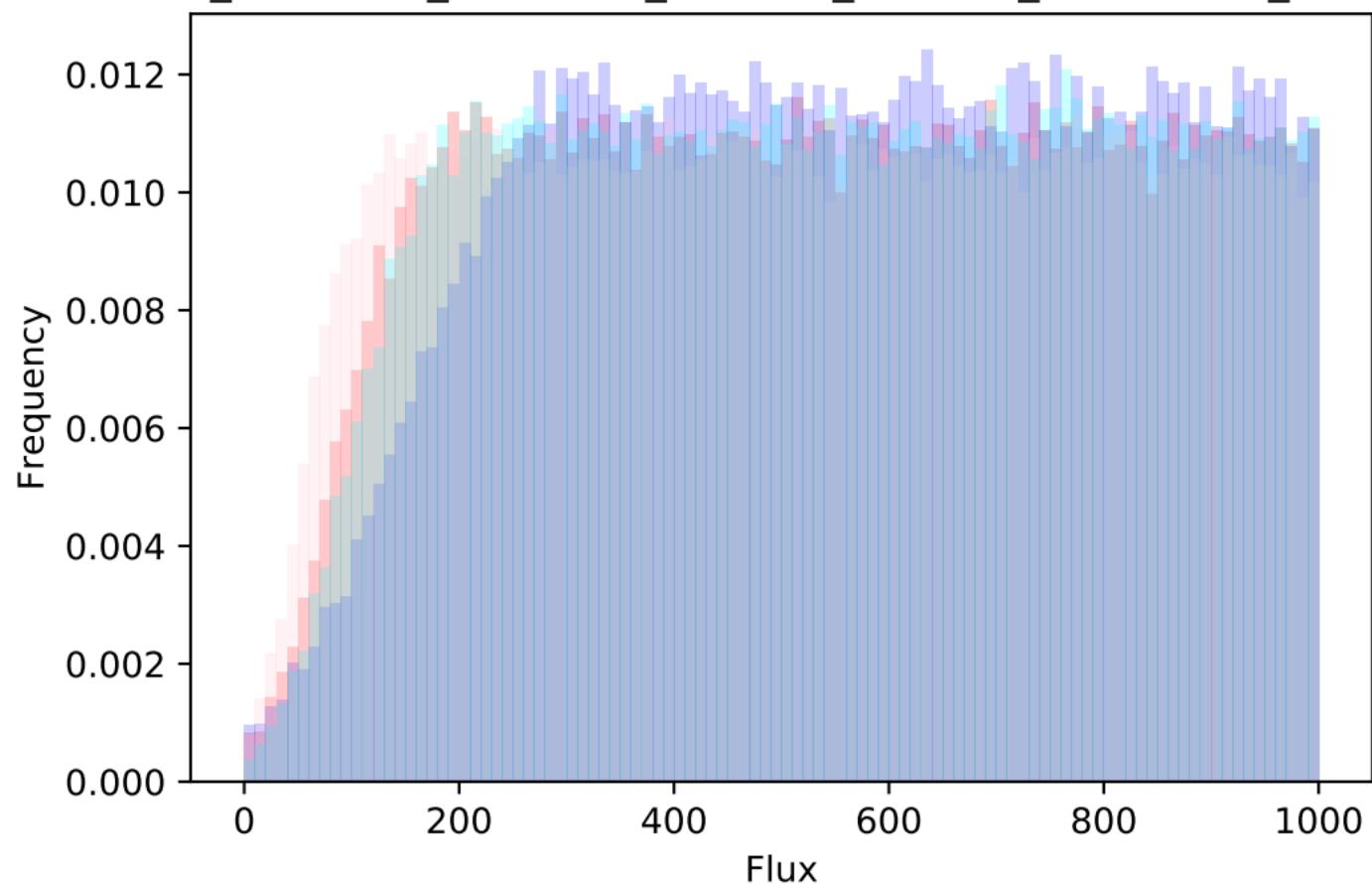
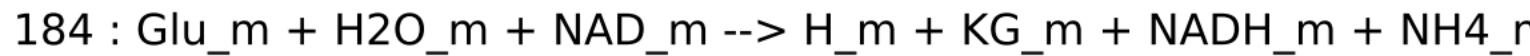


181 : 2.0 Fdrd\_h + Gln\_h + 2.0 H\_h + KG\_h --> 2.0 Fdox\_h + 2.0 Glu\_h

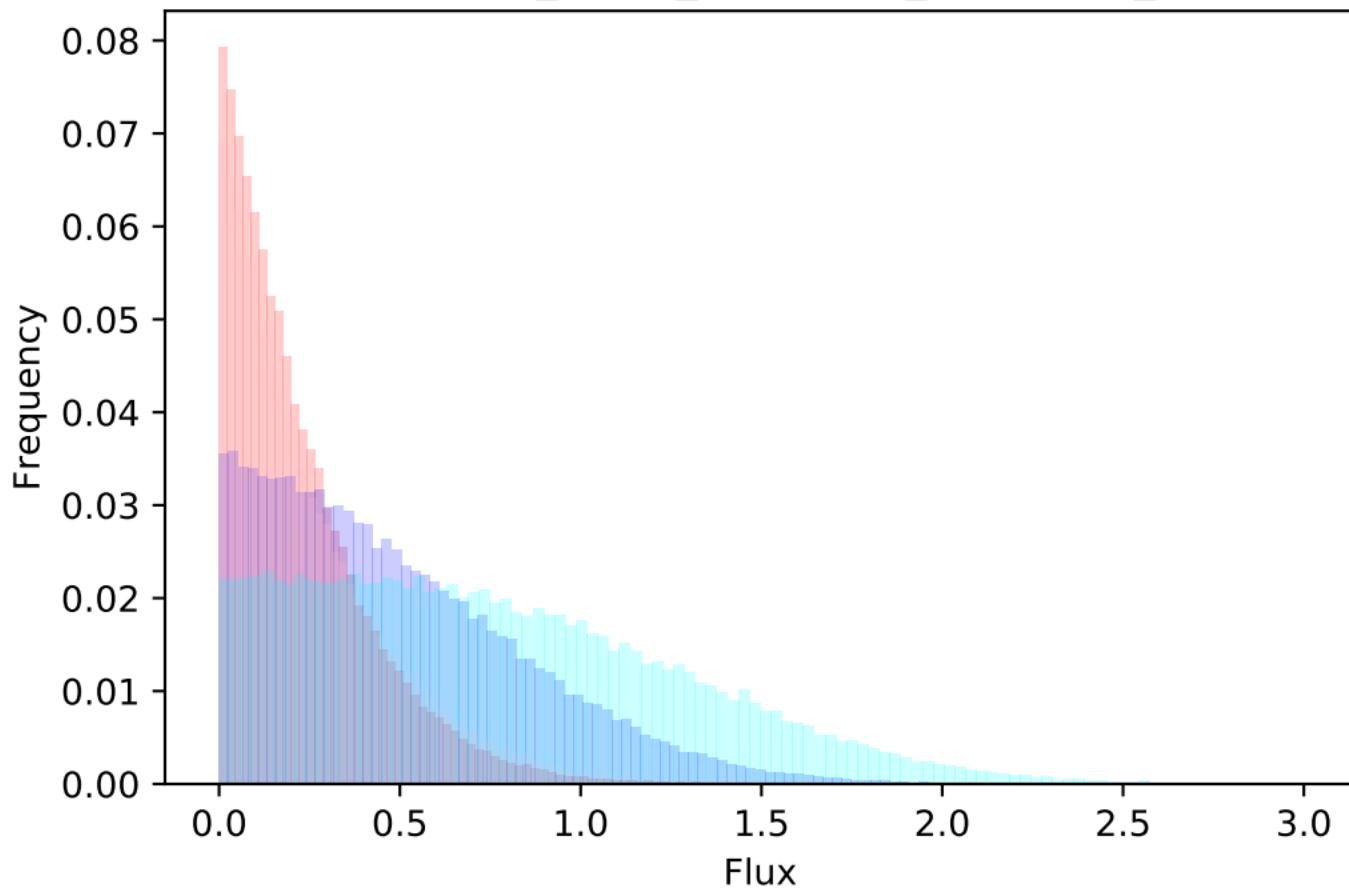




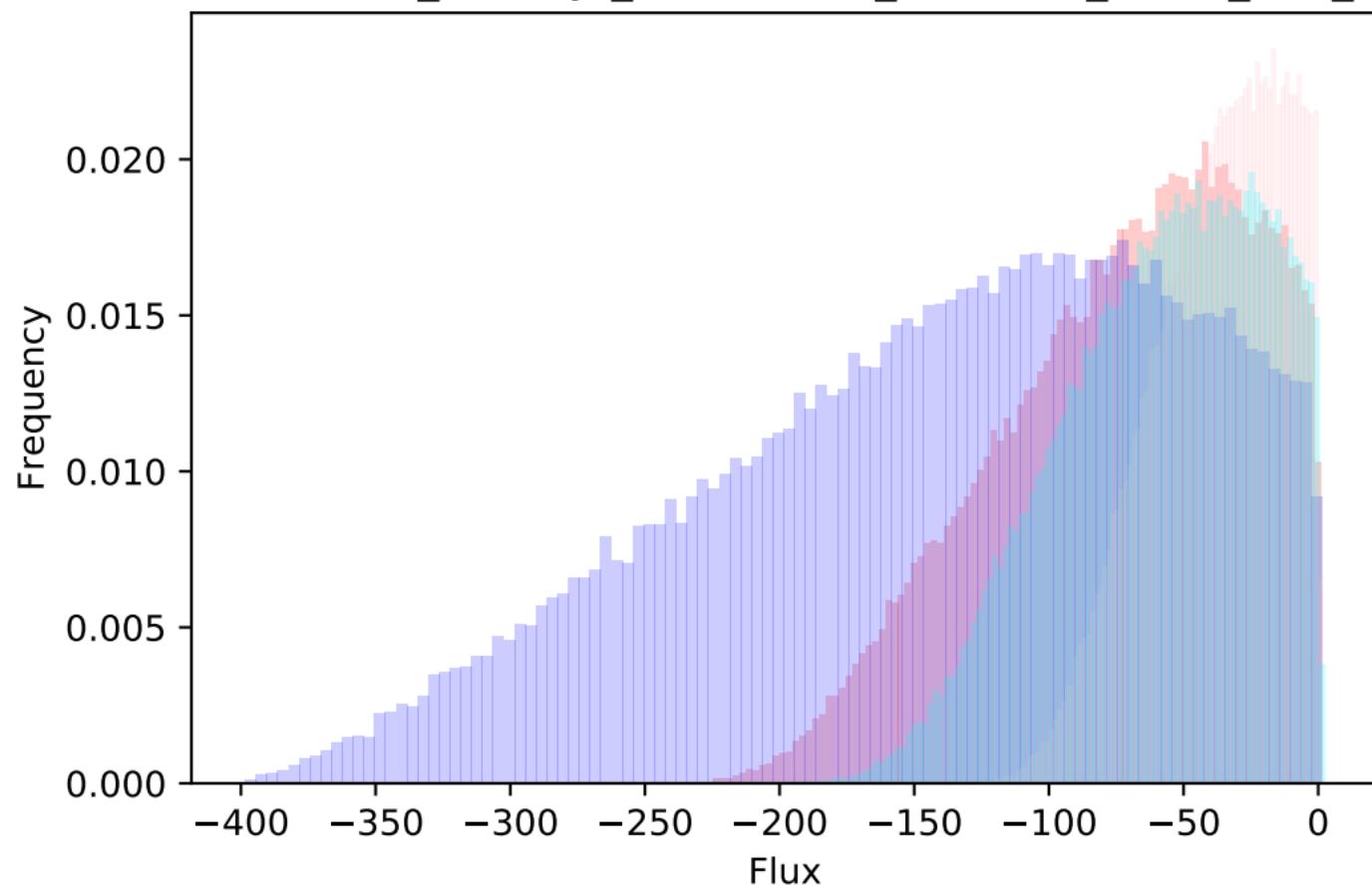




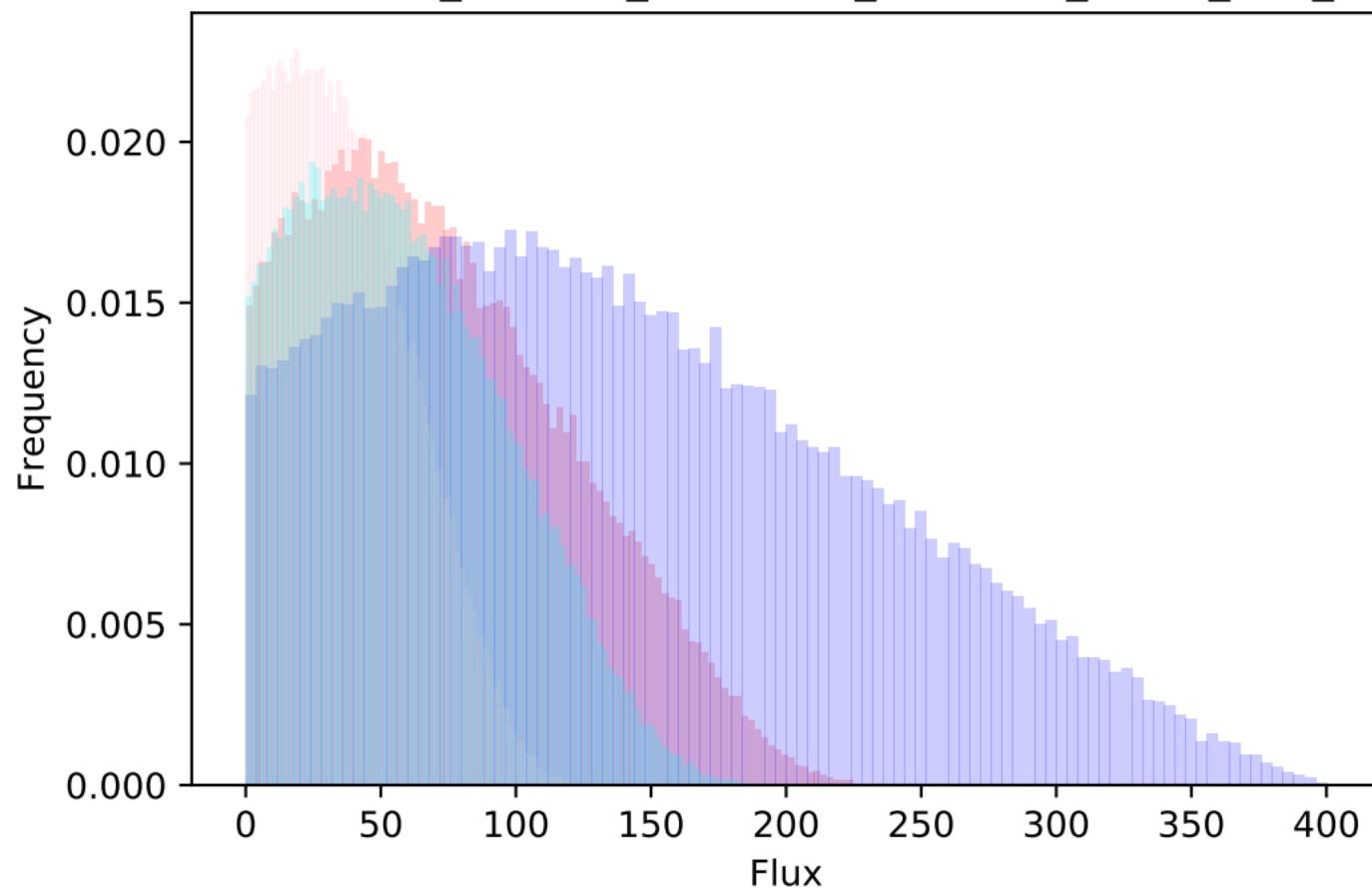
185 : Glu\_c + H\_c  $\rightarrow$  CO2\_c + GABA\_c

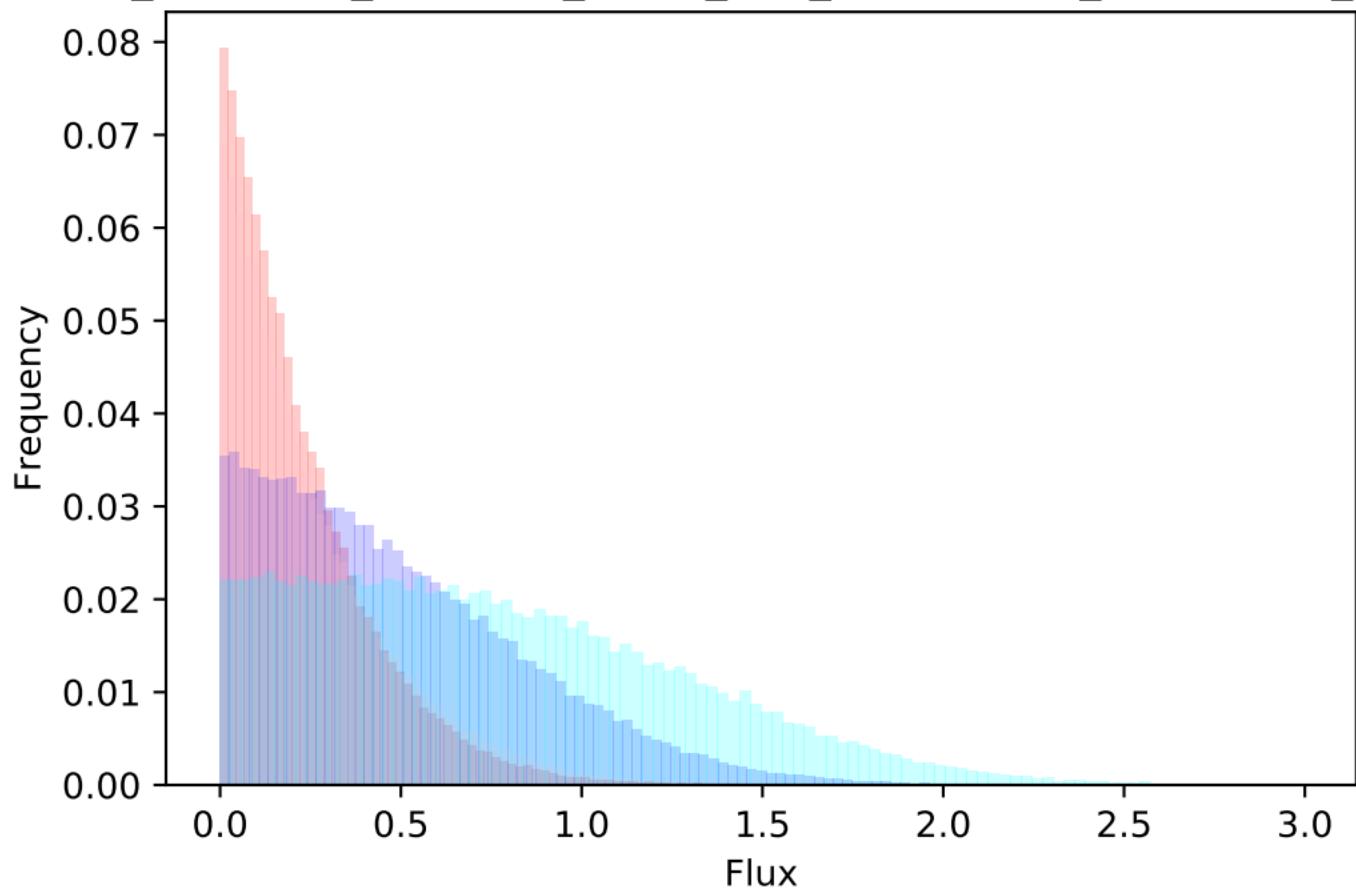


186 : GABA\_m + Pyr\_m <=> Ala\_m + SCA\_DASH\_SeA\_m

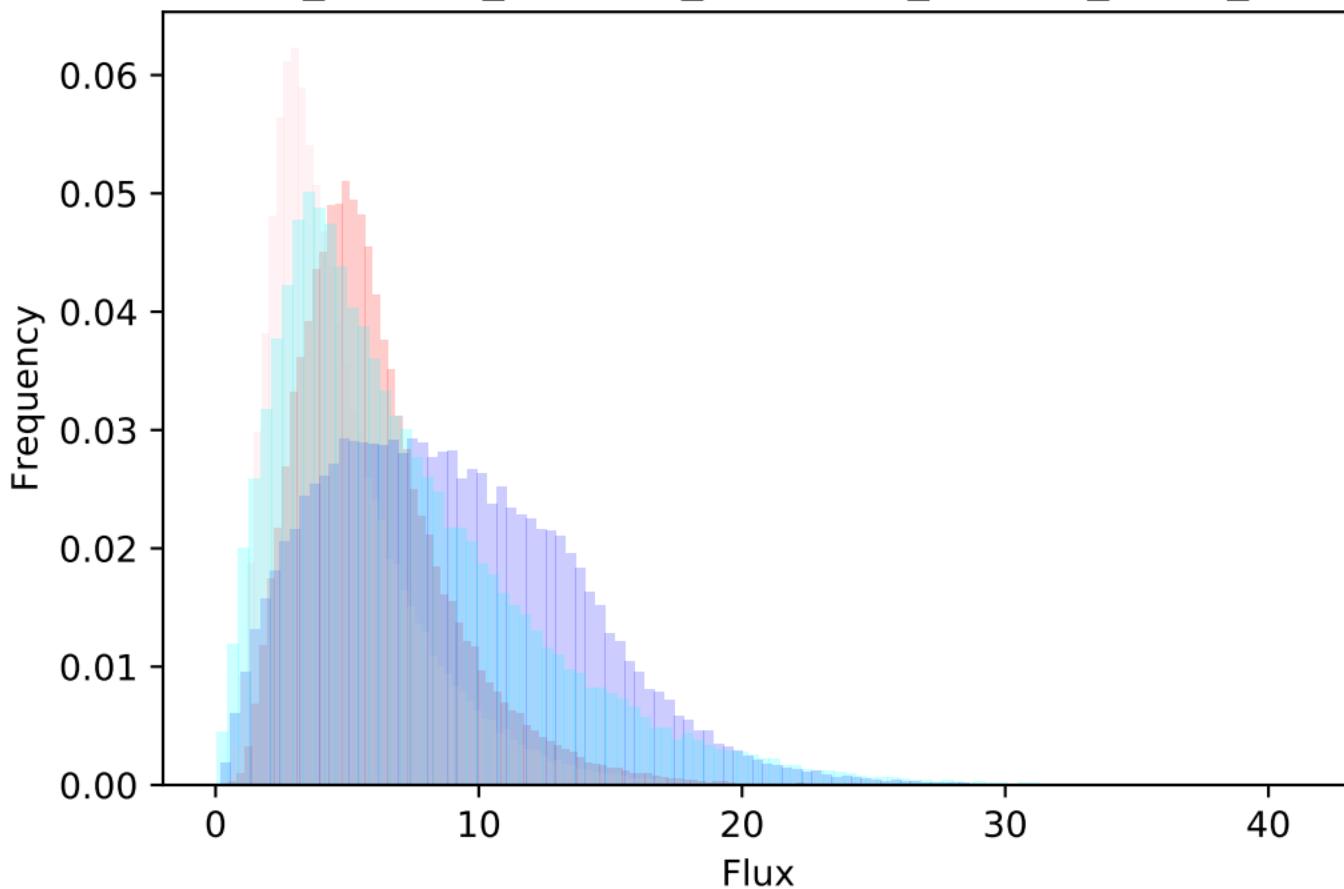


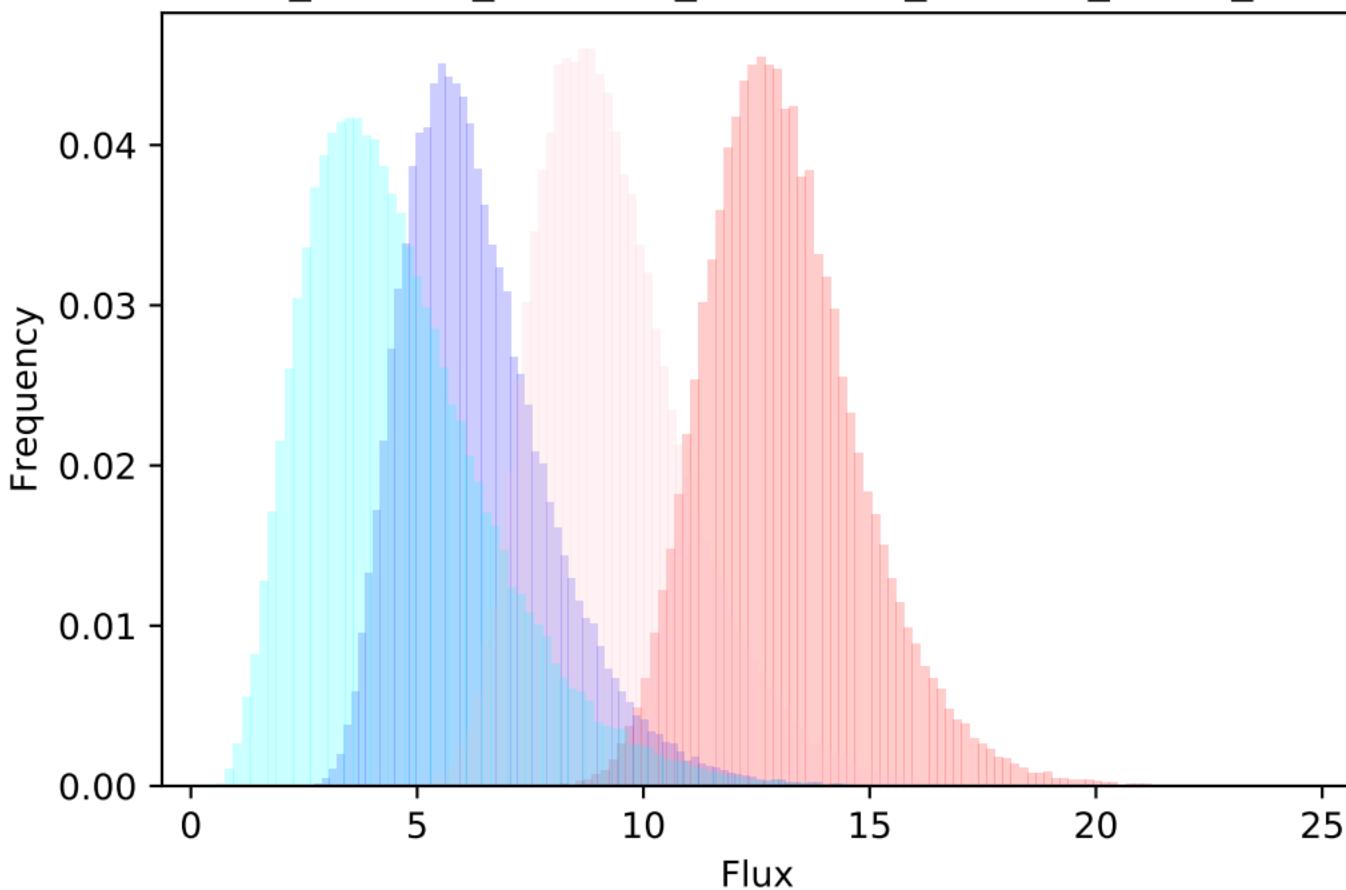
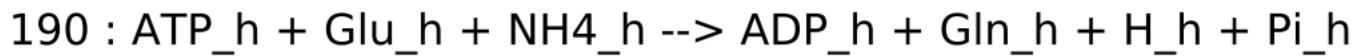
187 : GABA\_m + KG\_m --> Glu\_m + SCA\_DASH\_SeA\_m



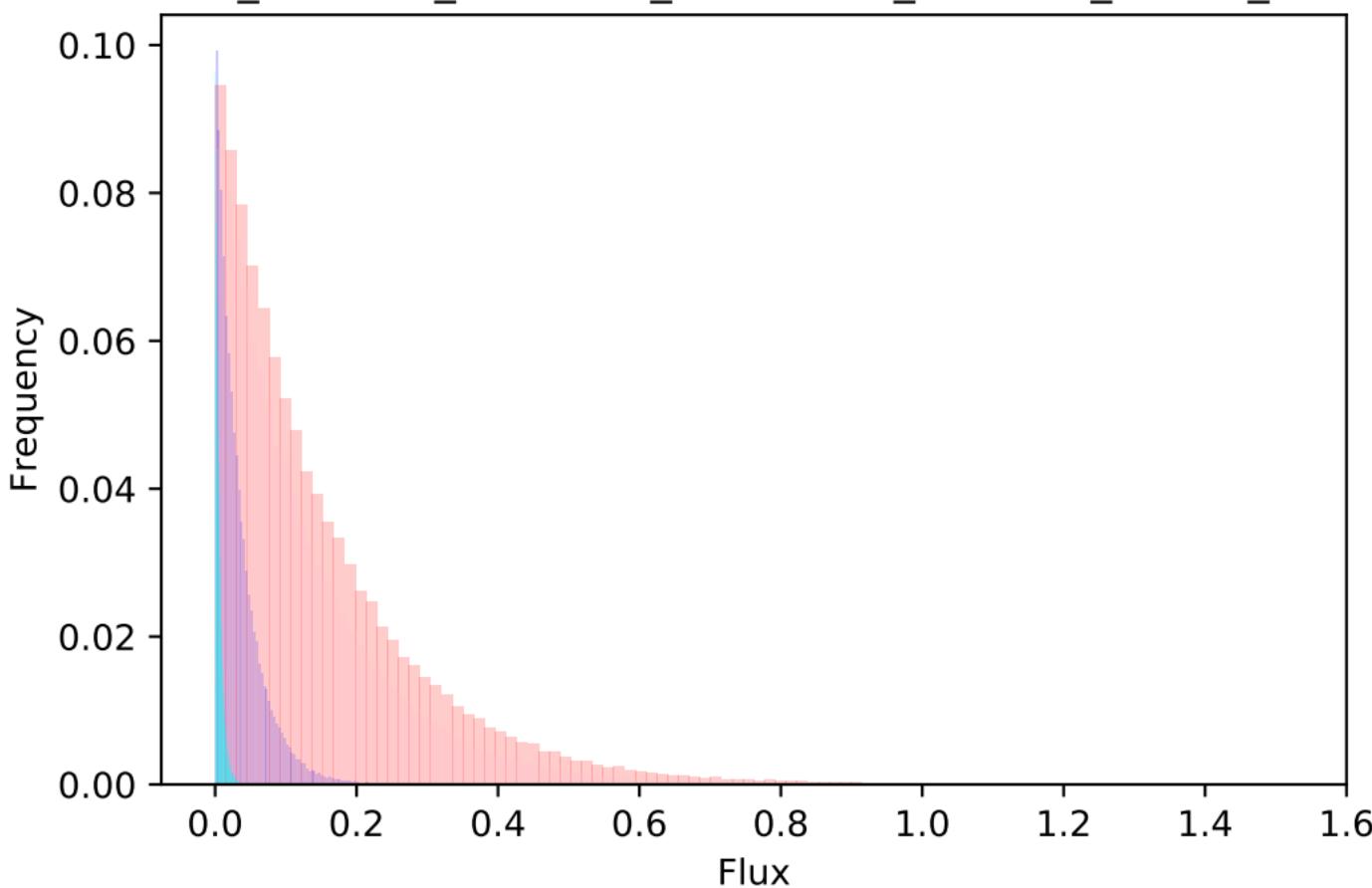


189 : ATP\_c + Glu\_c + NH4\_c --> ADP\_c + Gln\_c + H\_c + Pi\_c

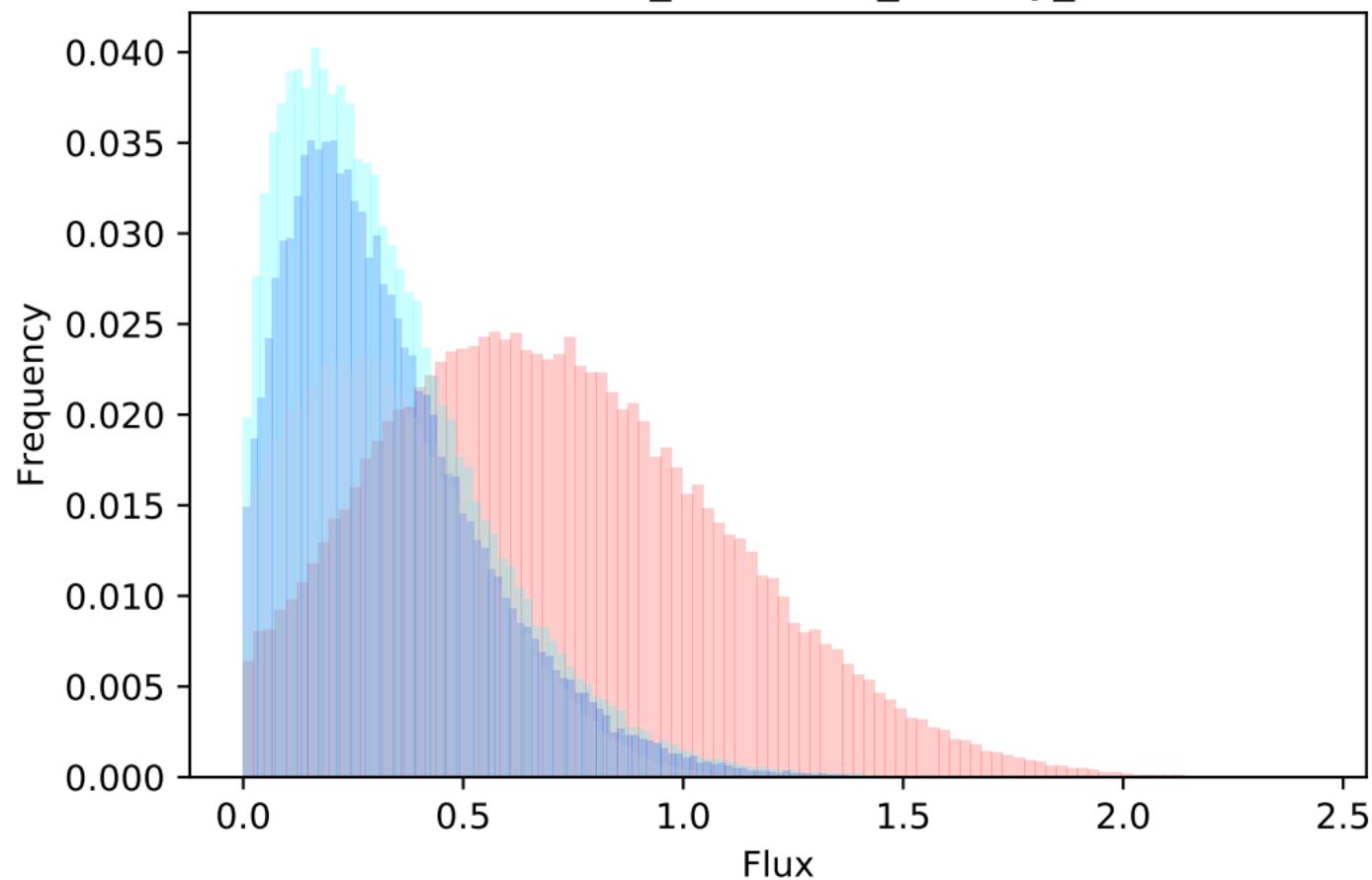




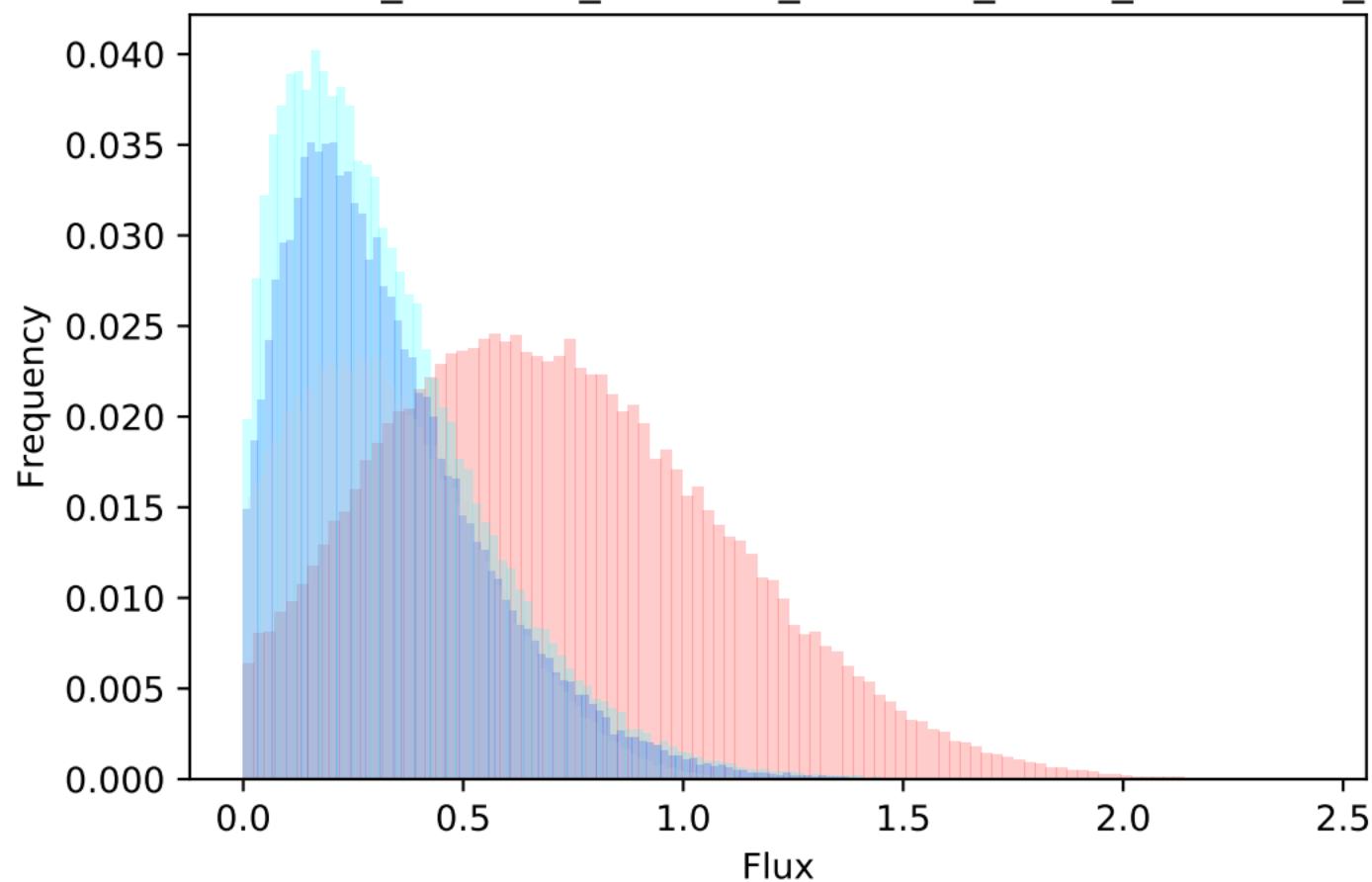
$$191 : \text{ATP\_m} + \text{Glu\_m} + \text{NH4\_m} \rightarrow \text{ADP\_m} + \text{Gln\_m} + \text{H\_m} + \text{Pi\_m}$$



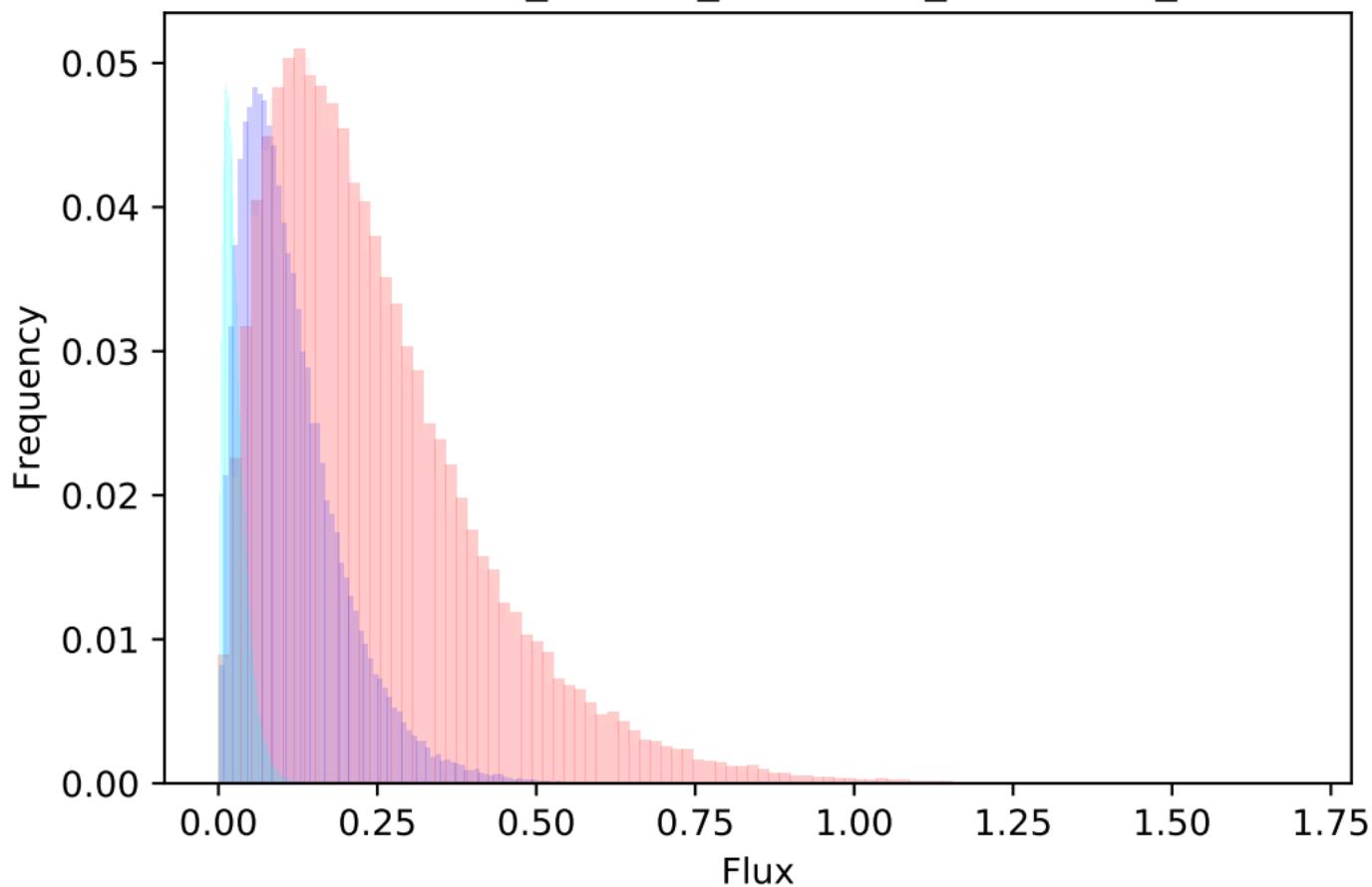
192 : Thr\_c --> ACD\_c + Gly\_c



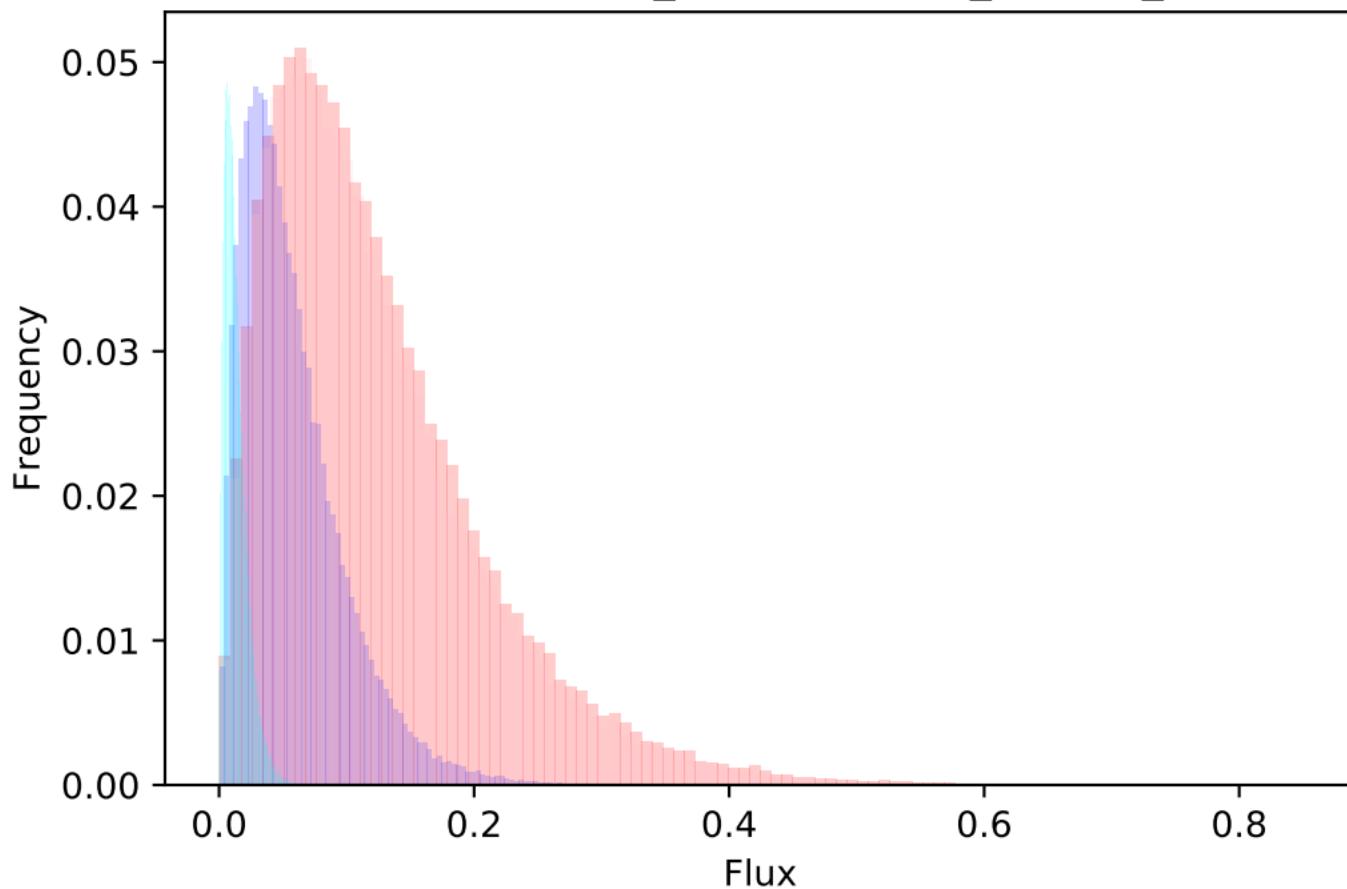
193 : ACD\_c + H2O\_c + NAD\_c --> AC\_c + H\_c + NADH\_c



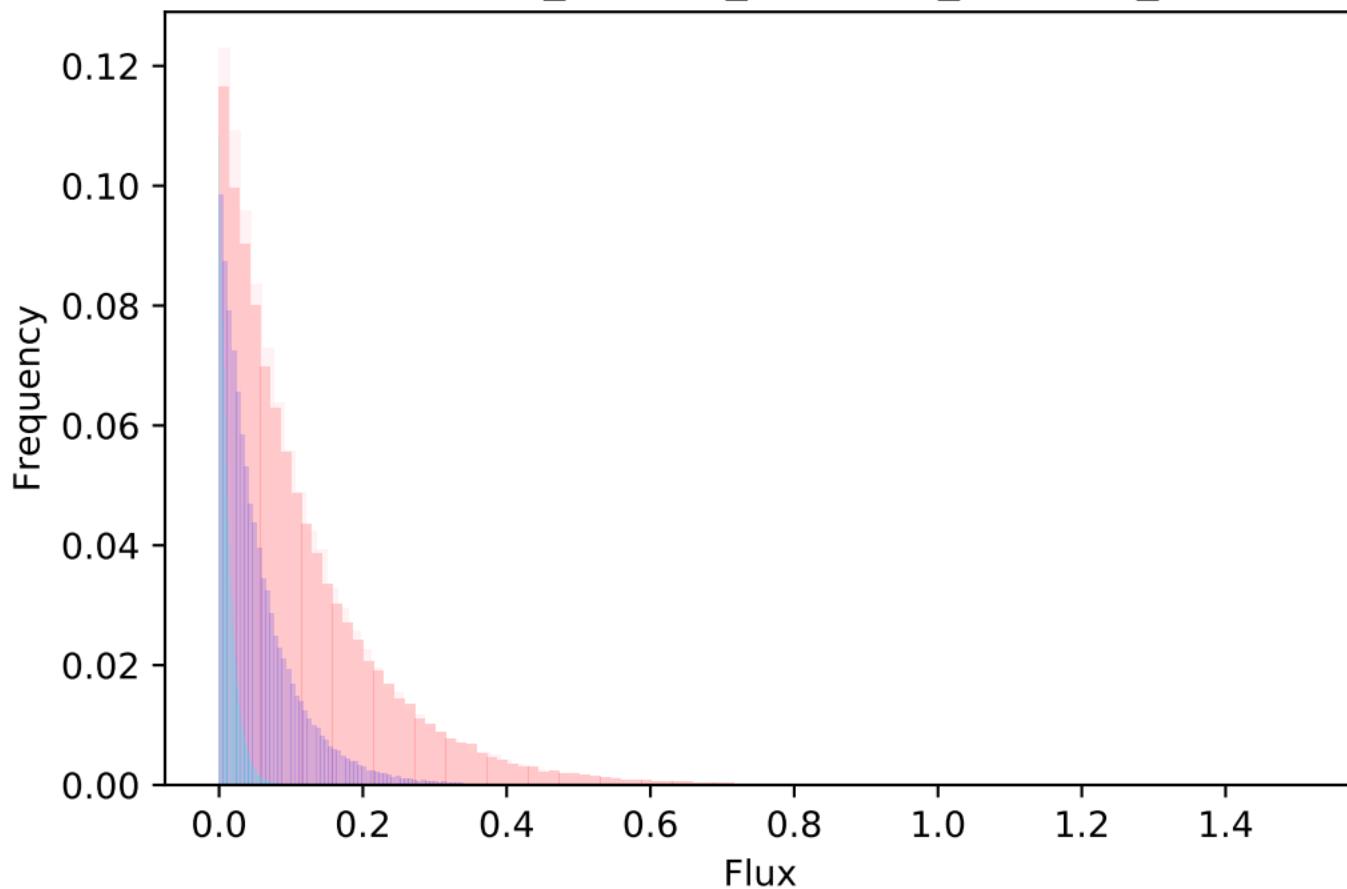
194 : GCA\_h + O2\_h --> GLX\_h + H2O2\_h



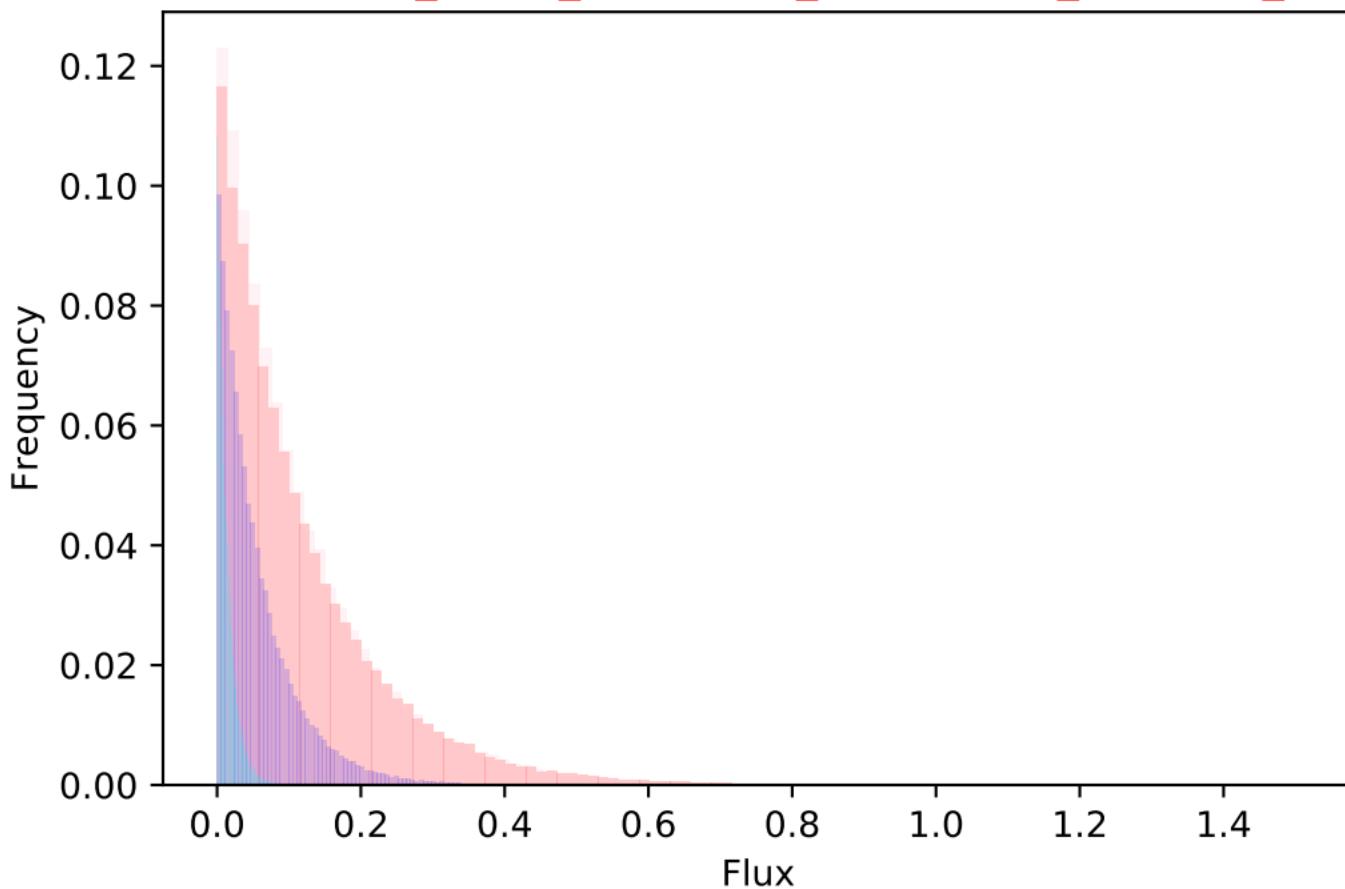
195 : 2.0 H<sub>2</sub>O<sub>2</sub>\_h --> 2.0 H<sub>2</sub>O\_h + O<sub>2</sub>\_h



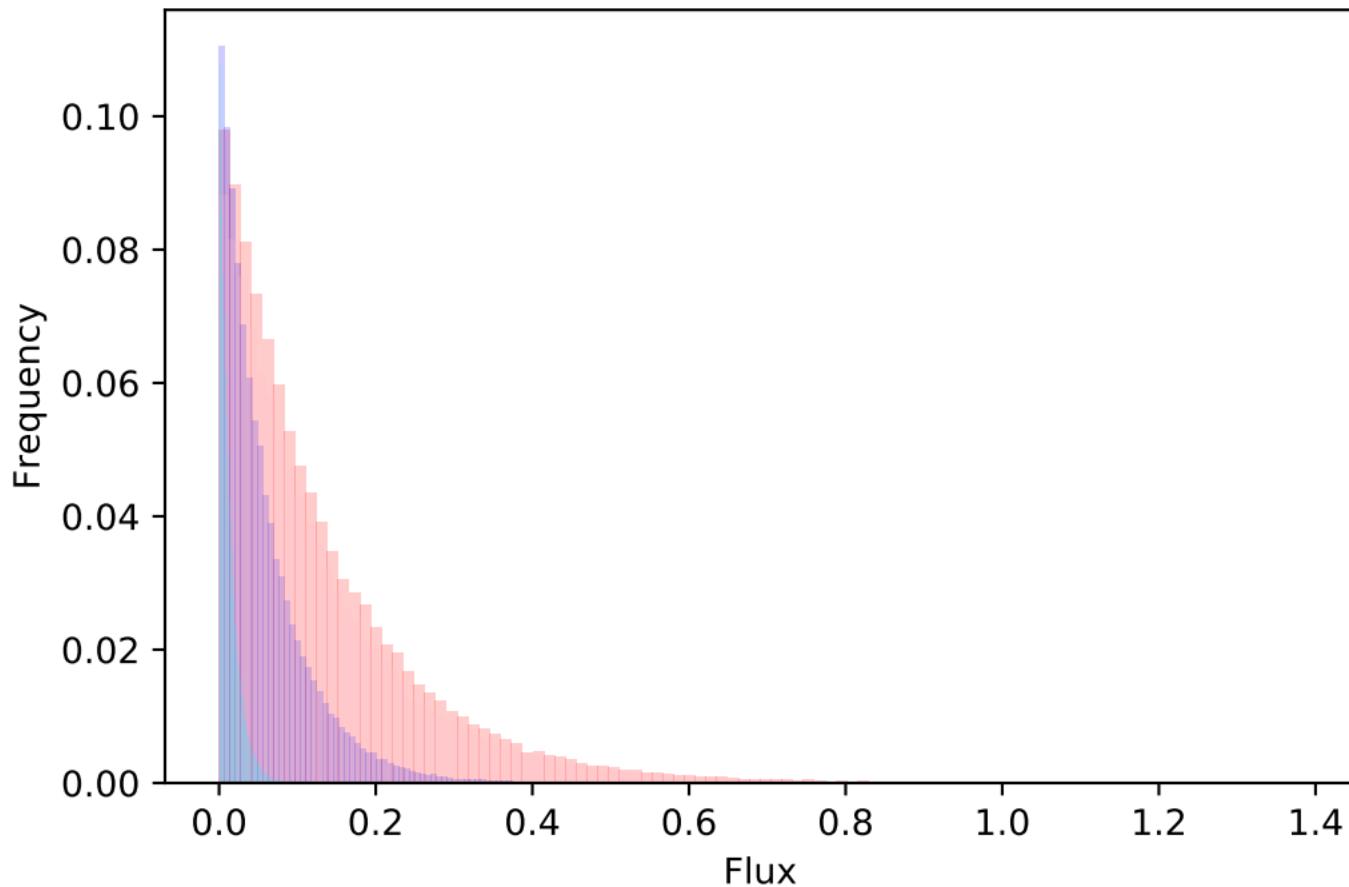
196 : GLX\_h + Ser\_h --> Gly\_h + HPR\_h



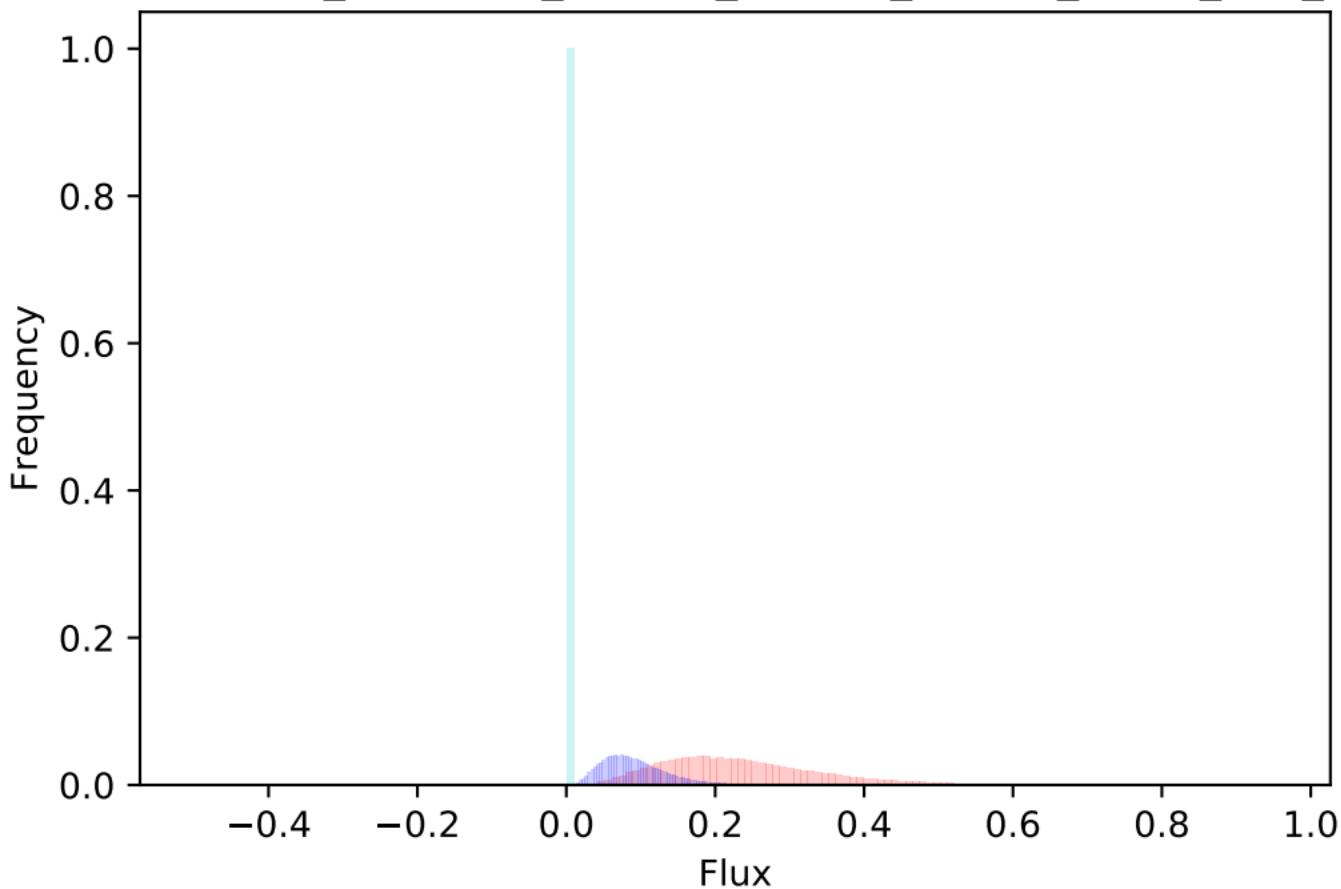
197 : HPR\_h + H\_h + NADH\_h --> GCEA\_h + NAD\_h



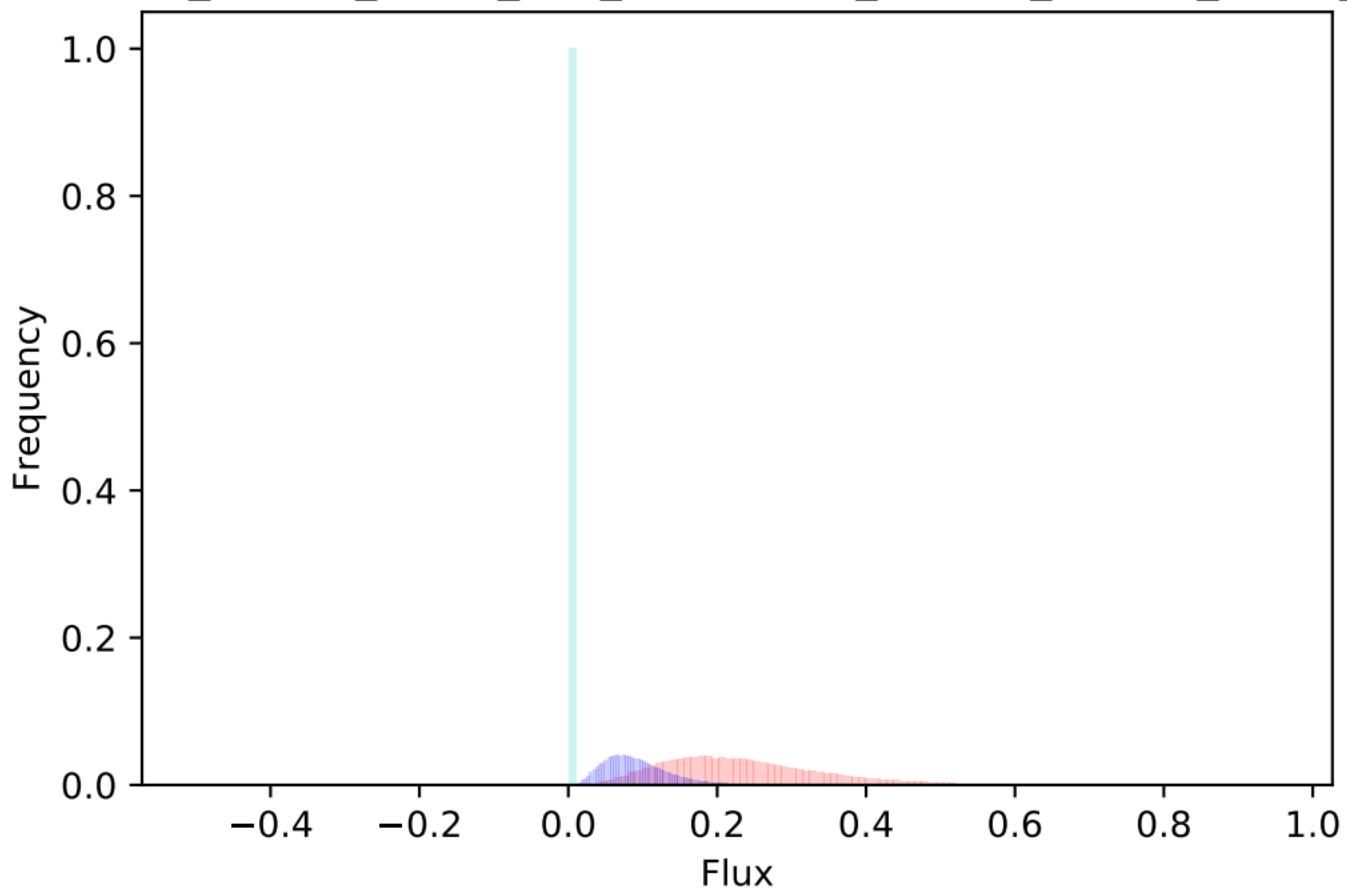
198 : GLX\_h + Glu\_h --> Gly\_h + KG\_h



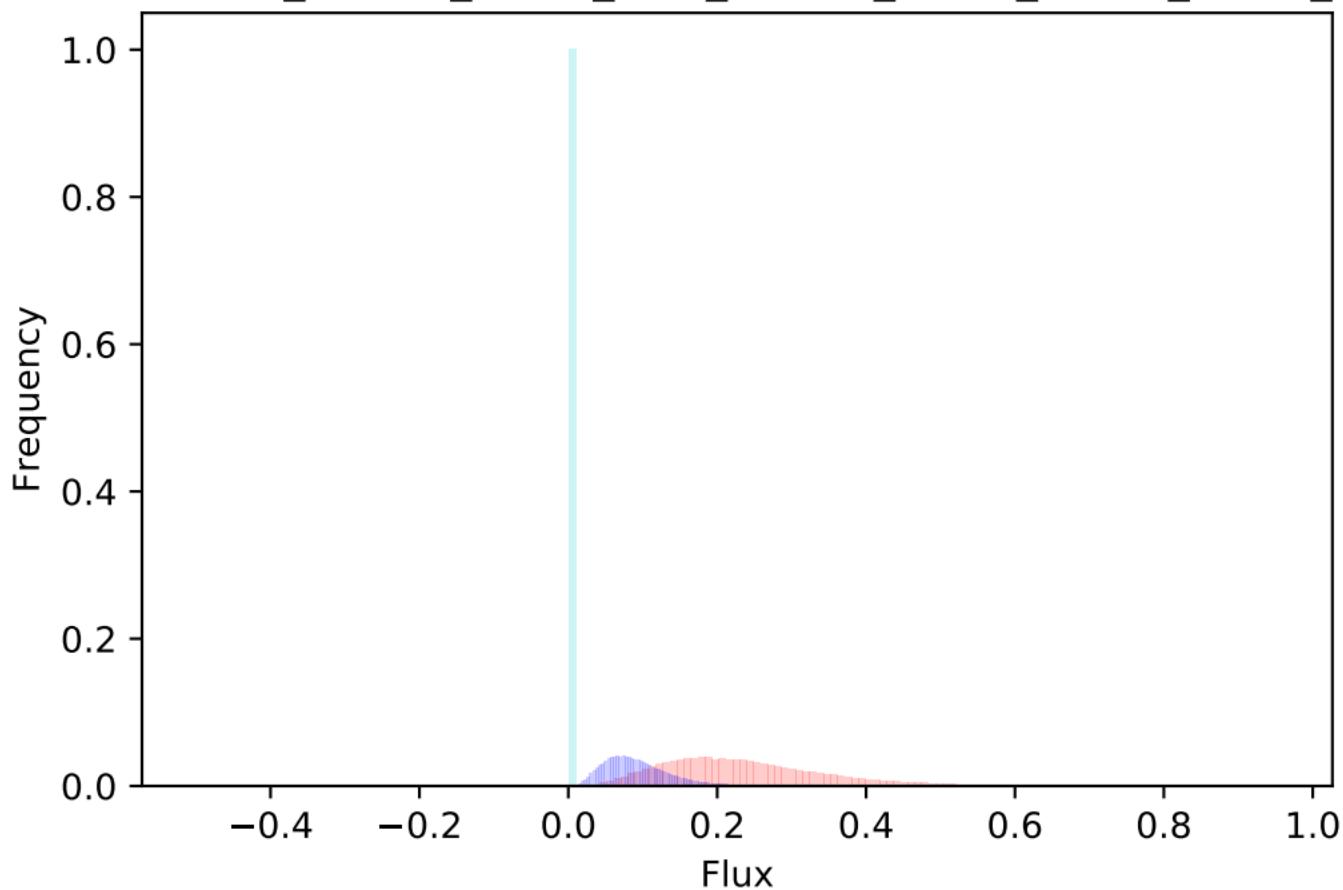
199 : ATP\_h + PRPP\_h --> H\_h + PPi\_h + PR\_DASH\_ATP\_h



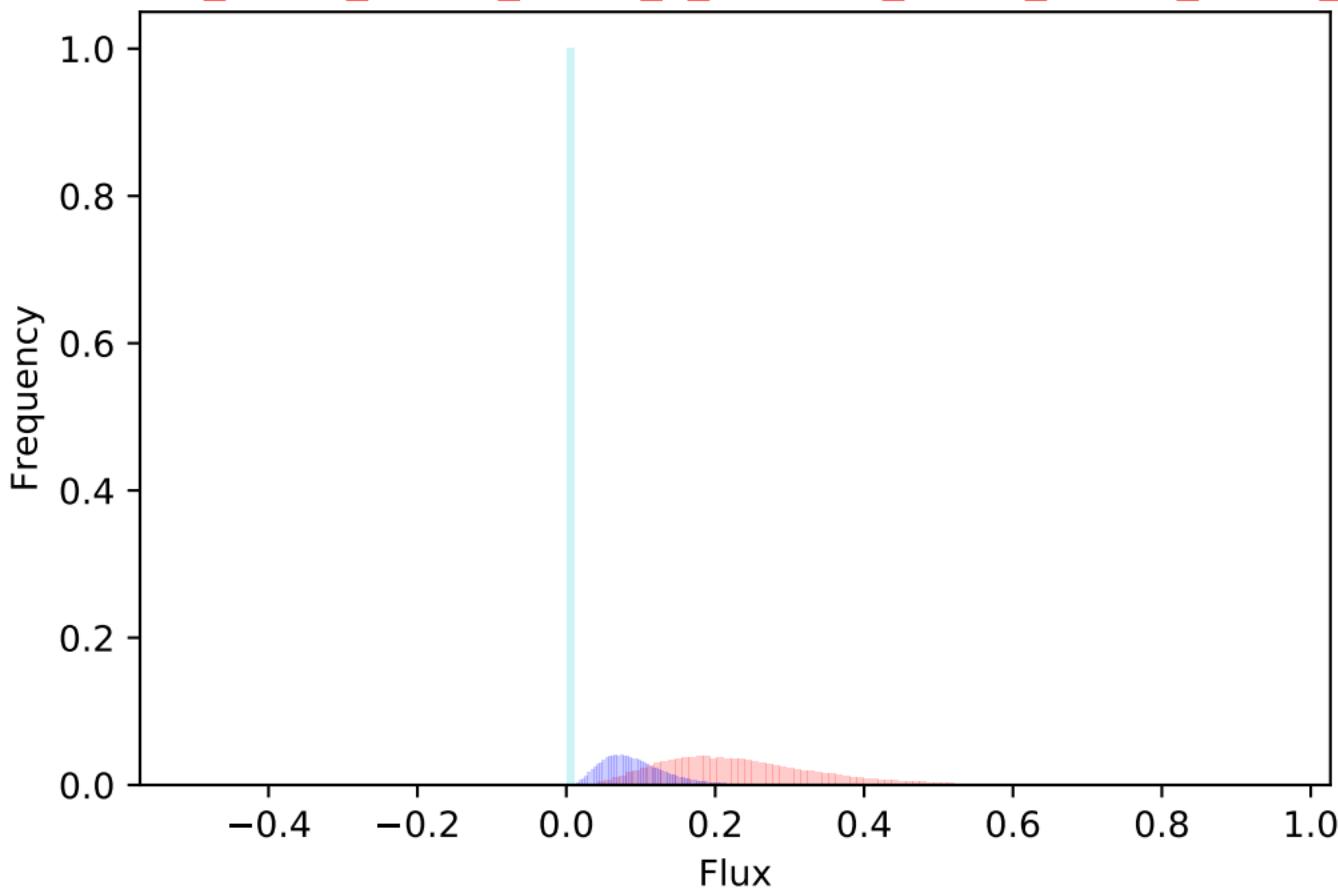
200 : H<sub>2</sub>O\_h + PR\_DASH\_ATP\_h --> 2.0 H\_h + PPi\_h + PR\_DASH\_AMP\_h



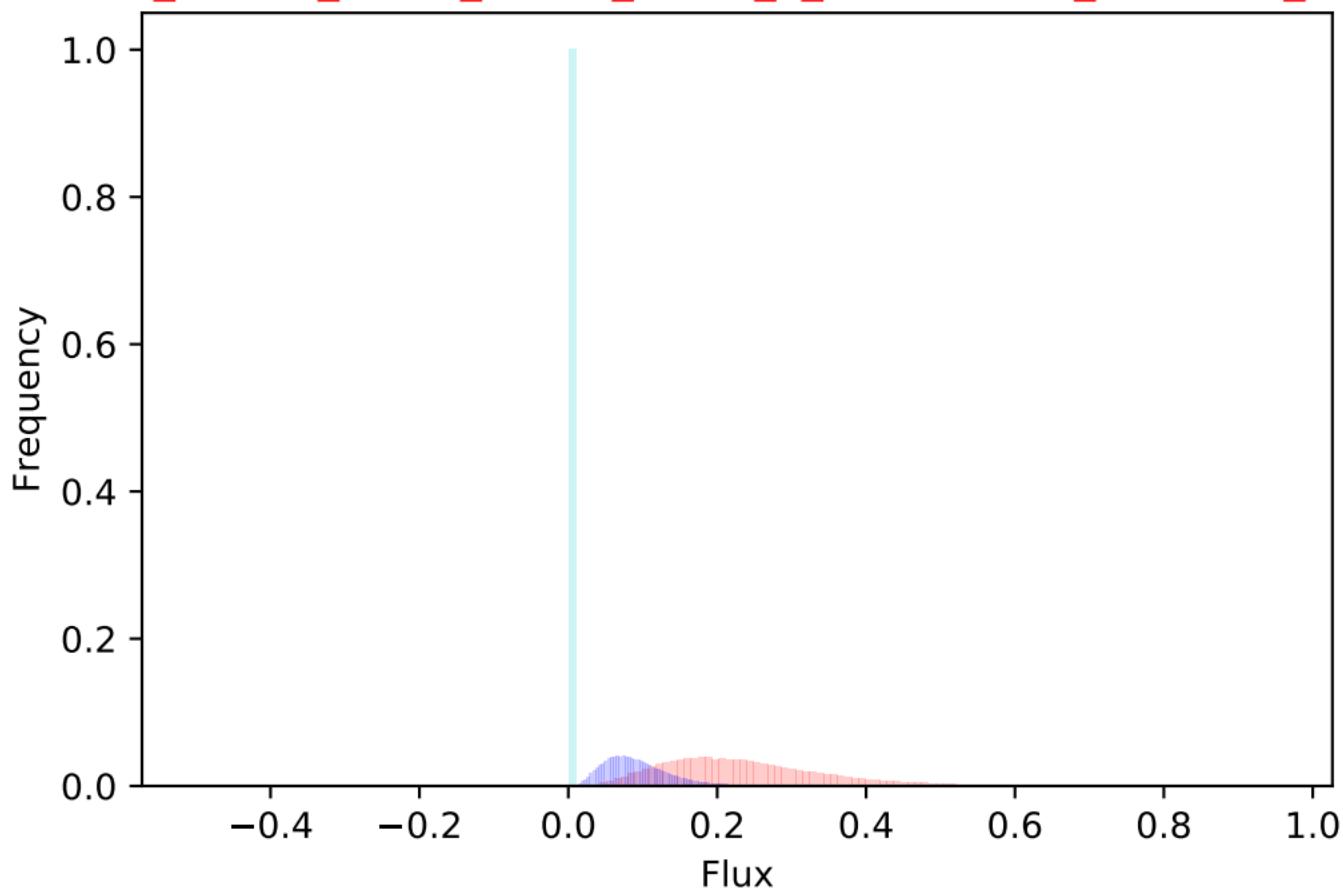
201 : H2O\_h + PR\_DASH\_AMP\_h --> P\_DASH\_AICAR\_DASH\_P\_h



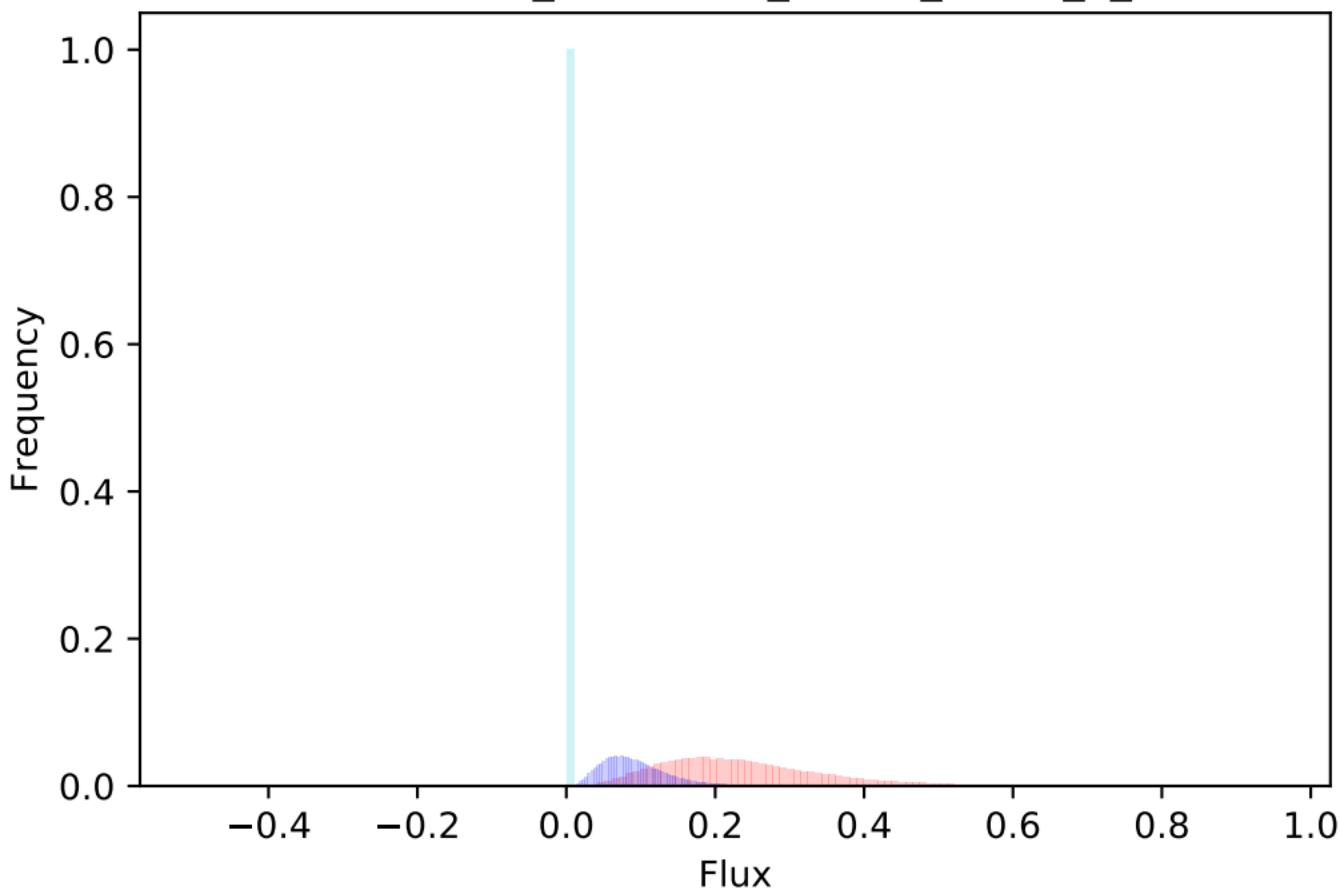
202 : P\_DASH\_AICAR\_DASH\_P\_h --> Pu\_DASH\_AICAR\_DASH\_P\_h



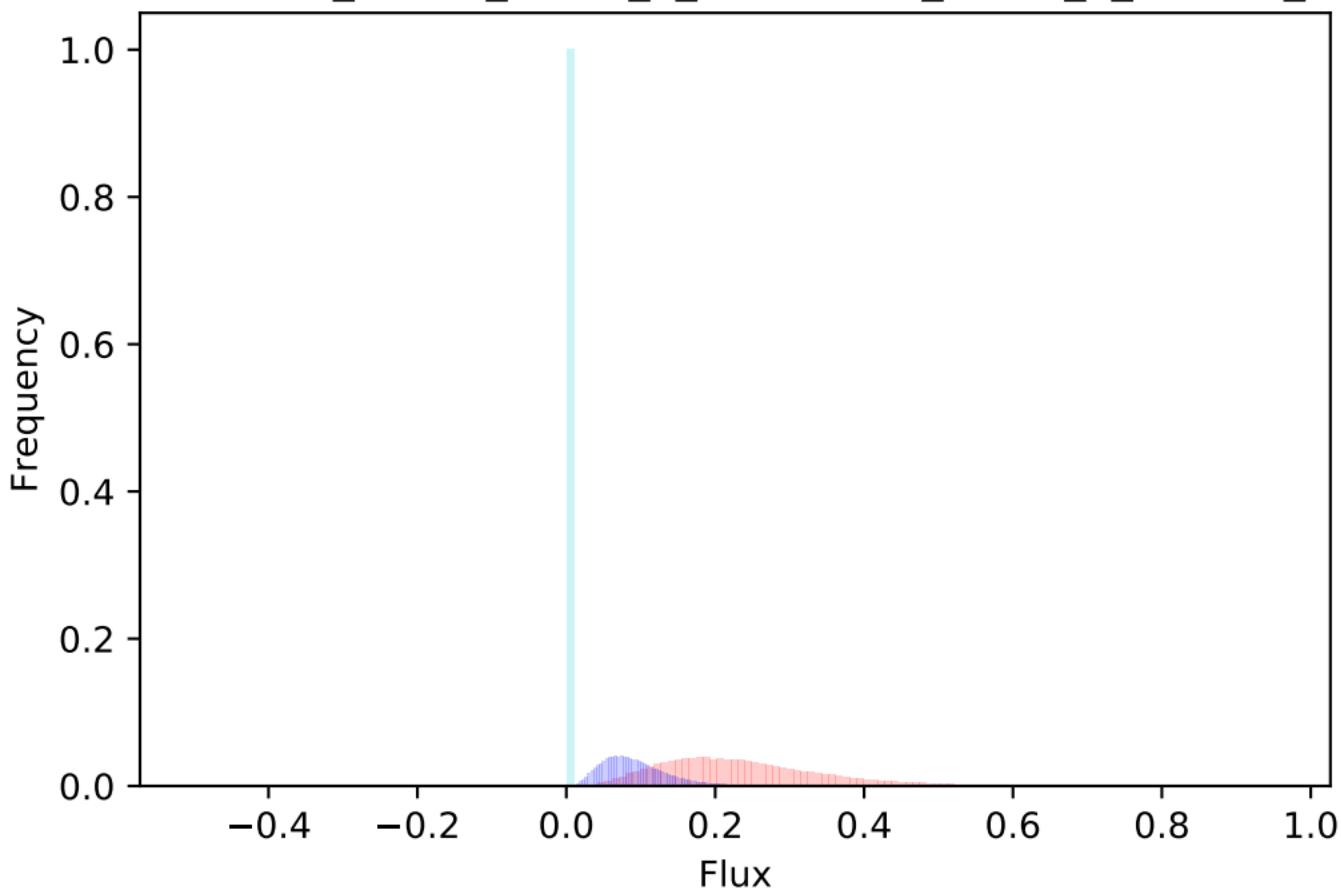
203 : Gln\_h + Pu\_DASH\_AICAR\_DASH\_P\_h --> AICAR\_h + EIGP\_h + Glu\_



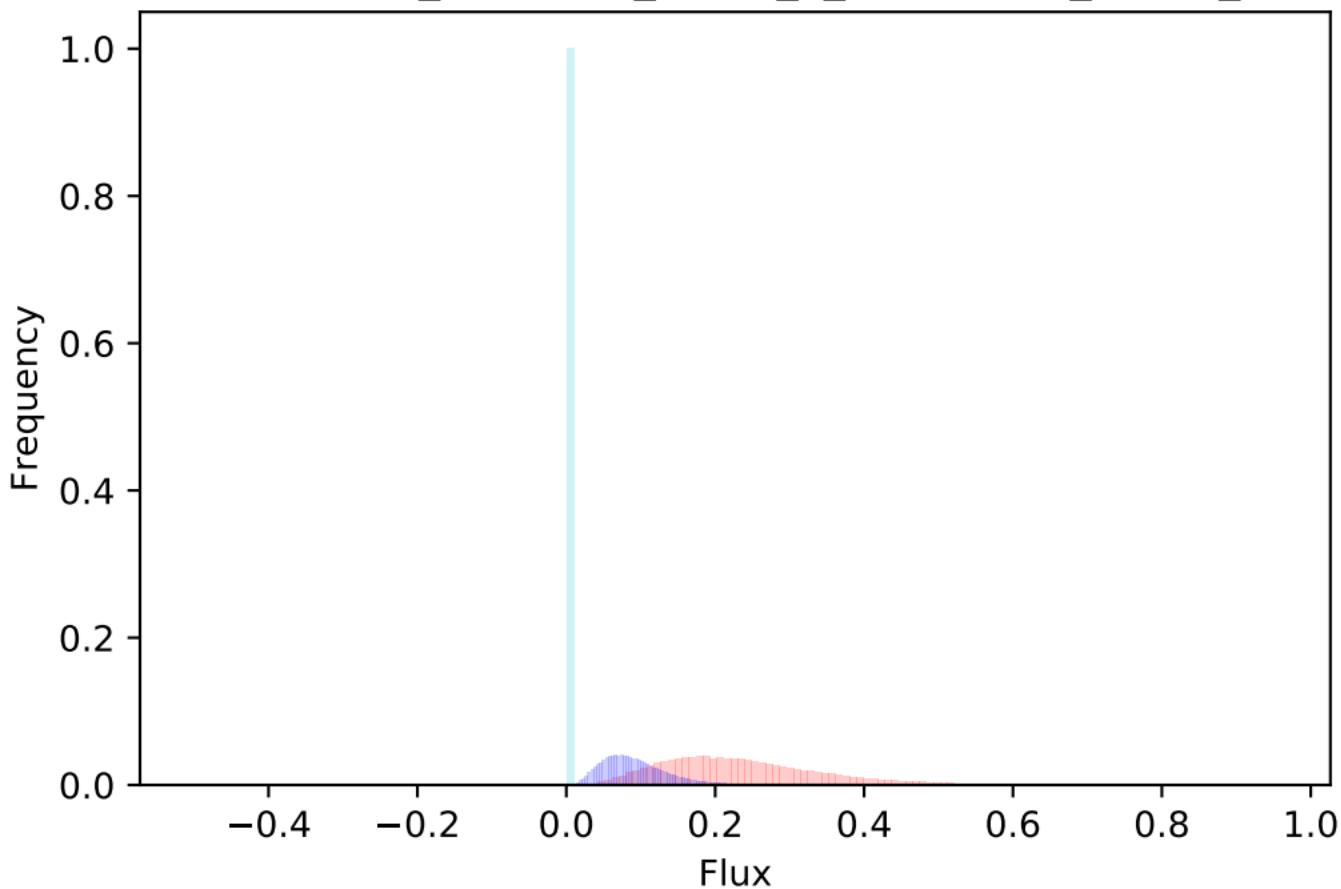
204 : EIGP\_h --> H2O\_h + IA\_DASH\_P\_h



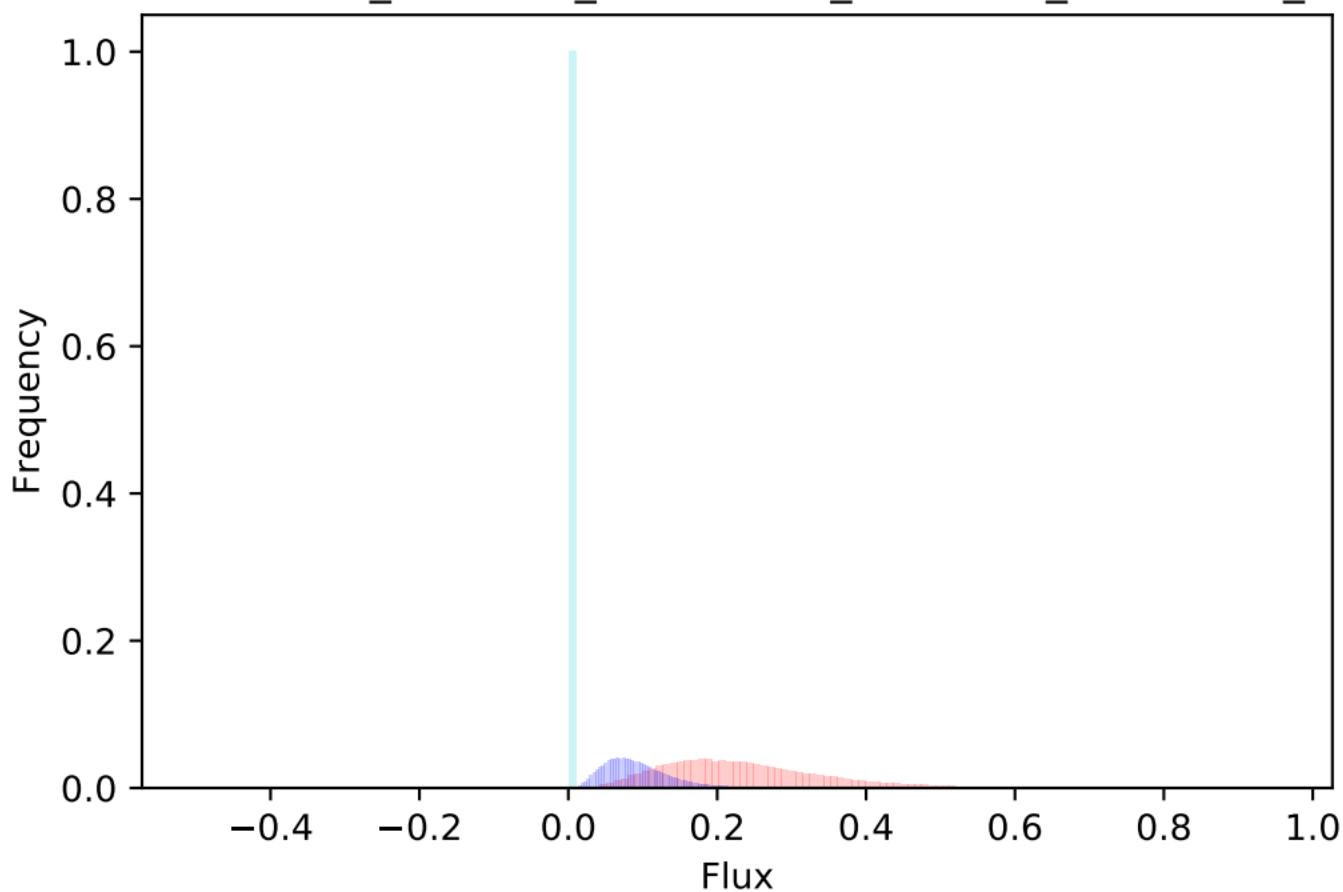
205 : Glu\_h + IA\_DASH\_P\_h --> Hisol\_DASH\_P\_h + KG\_h

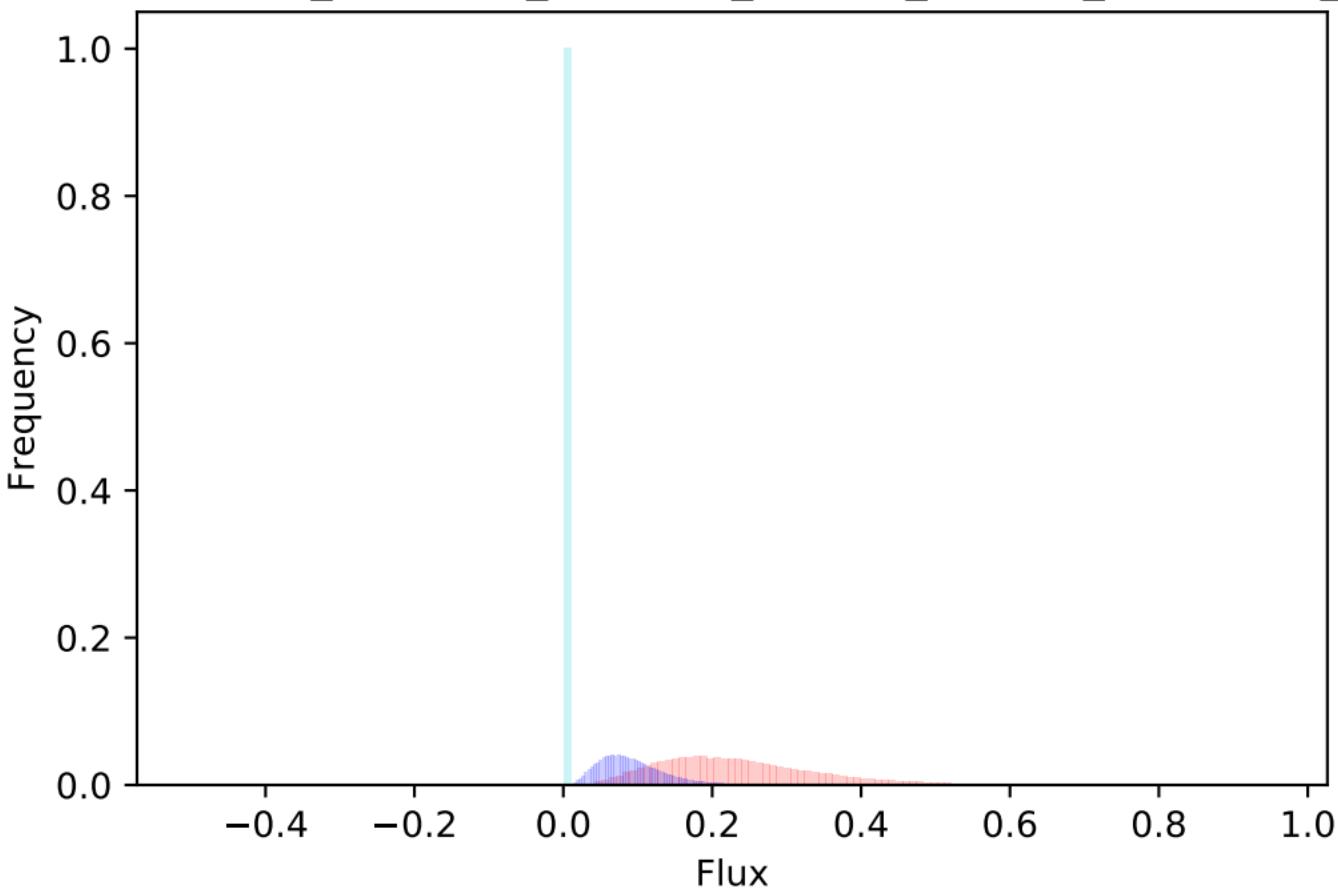


206 : H2O\_h + Hisol\_DASH\_P\_h --> Hisol\_h + Pi\_h

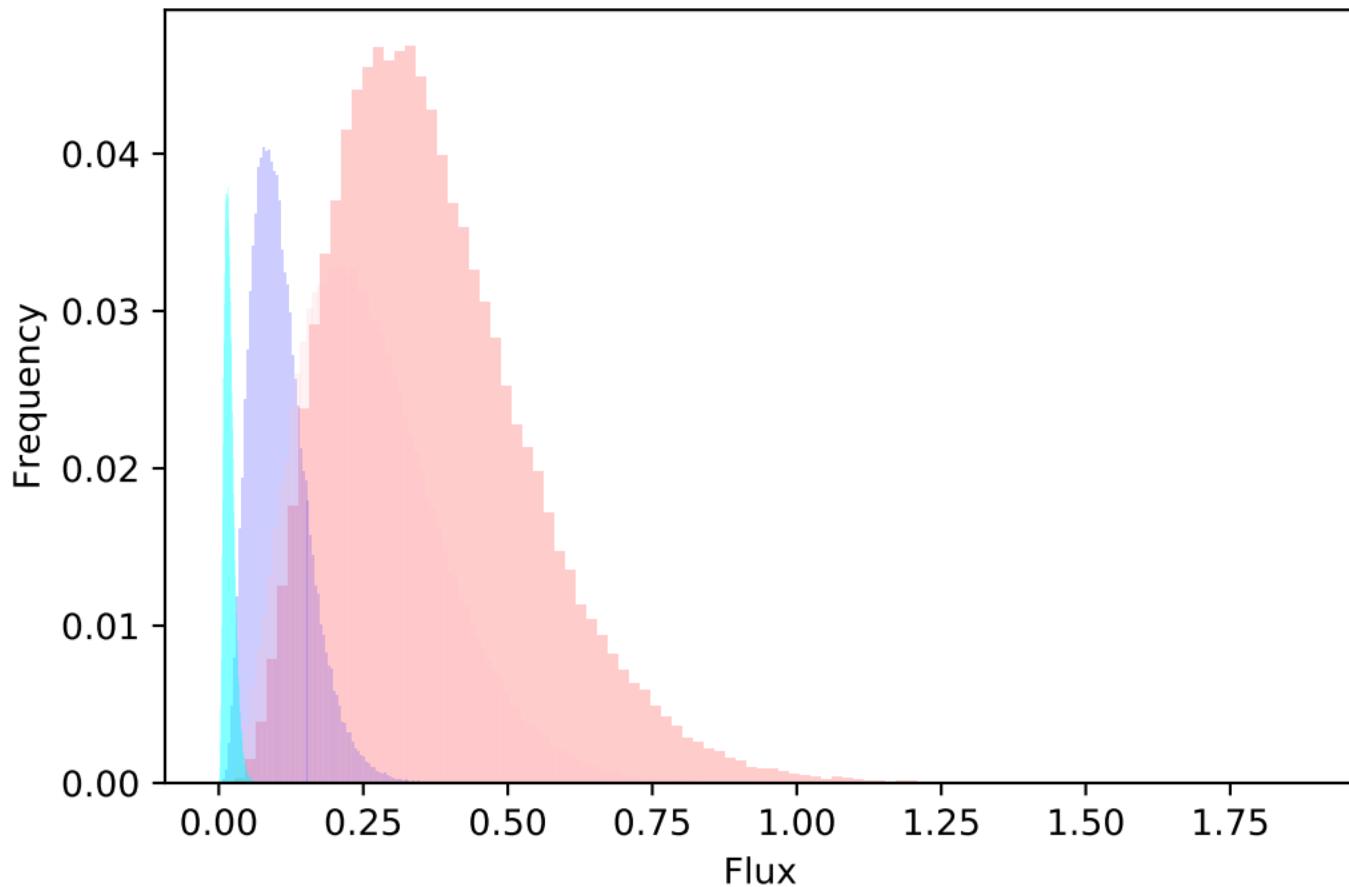


207 : Hisol\_h + NAD\_h --> 2.0 H\_h + Hisal\_h + NADH\_h

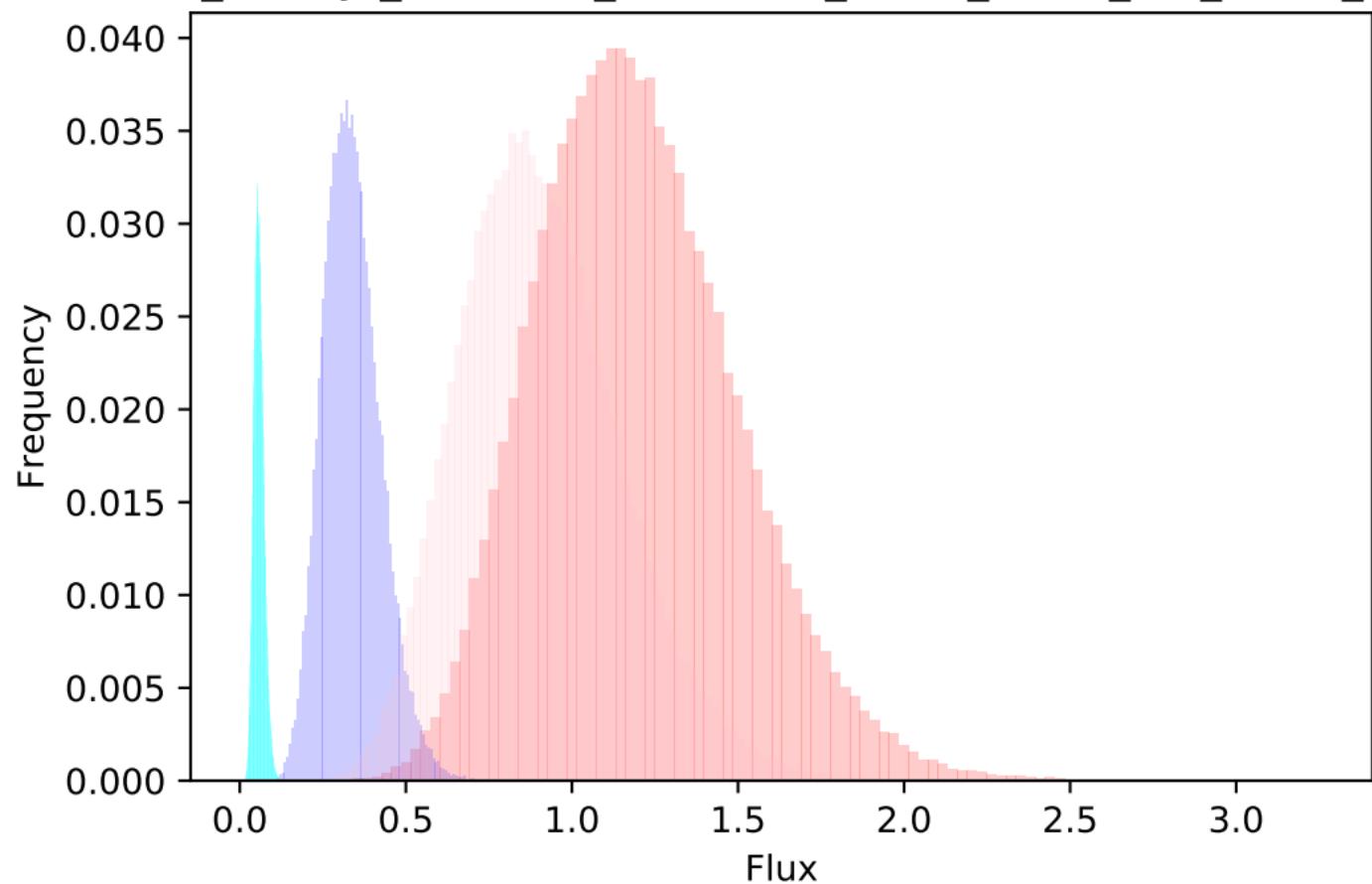




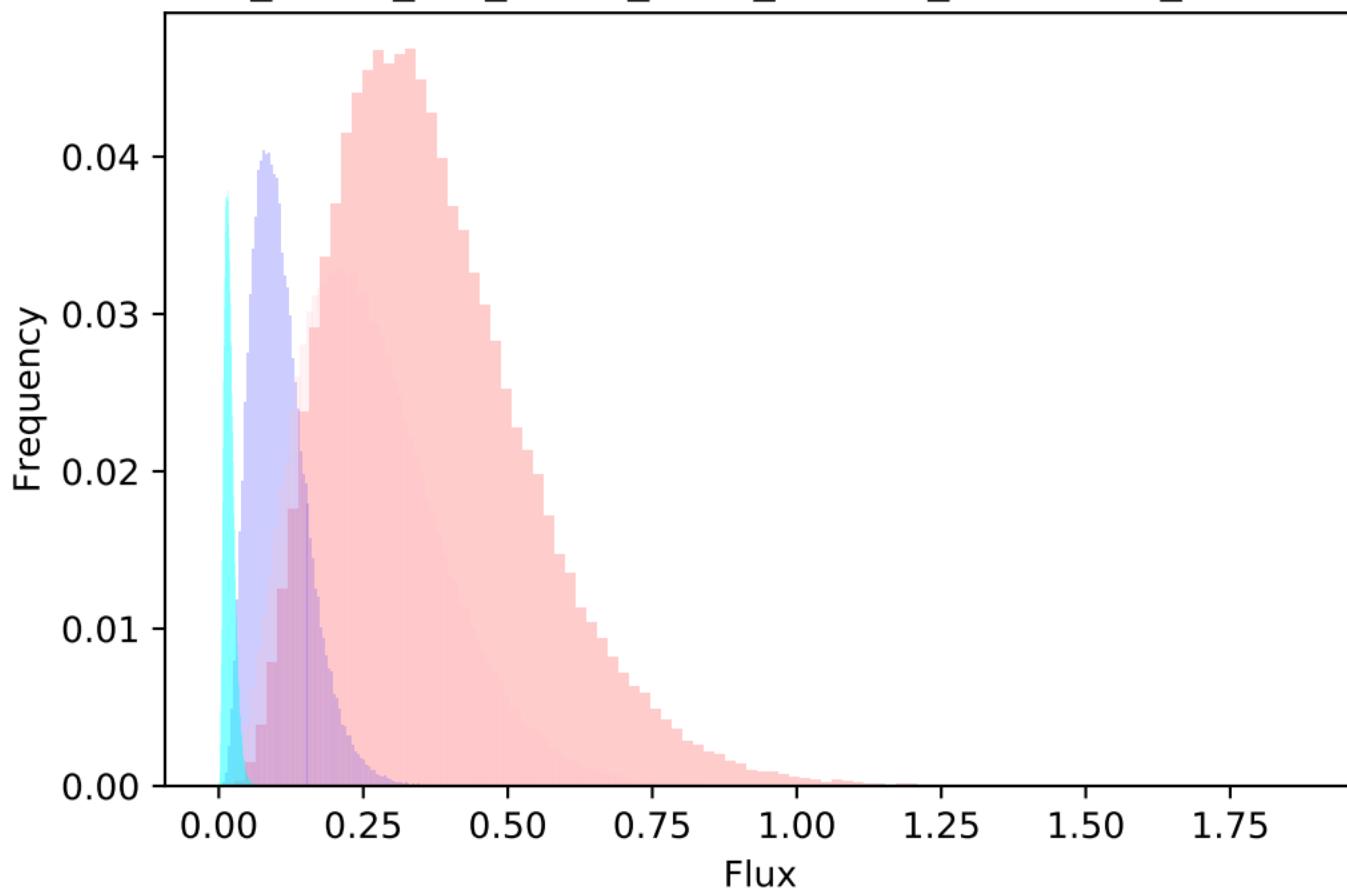
209 : Thr\_h --> NH4\_h + OB\_h



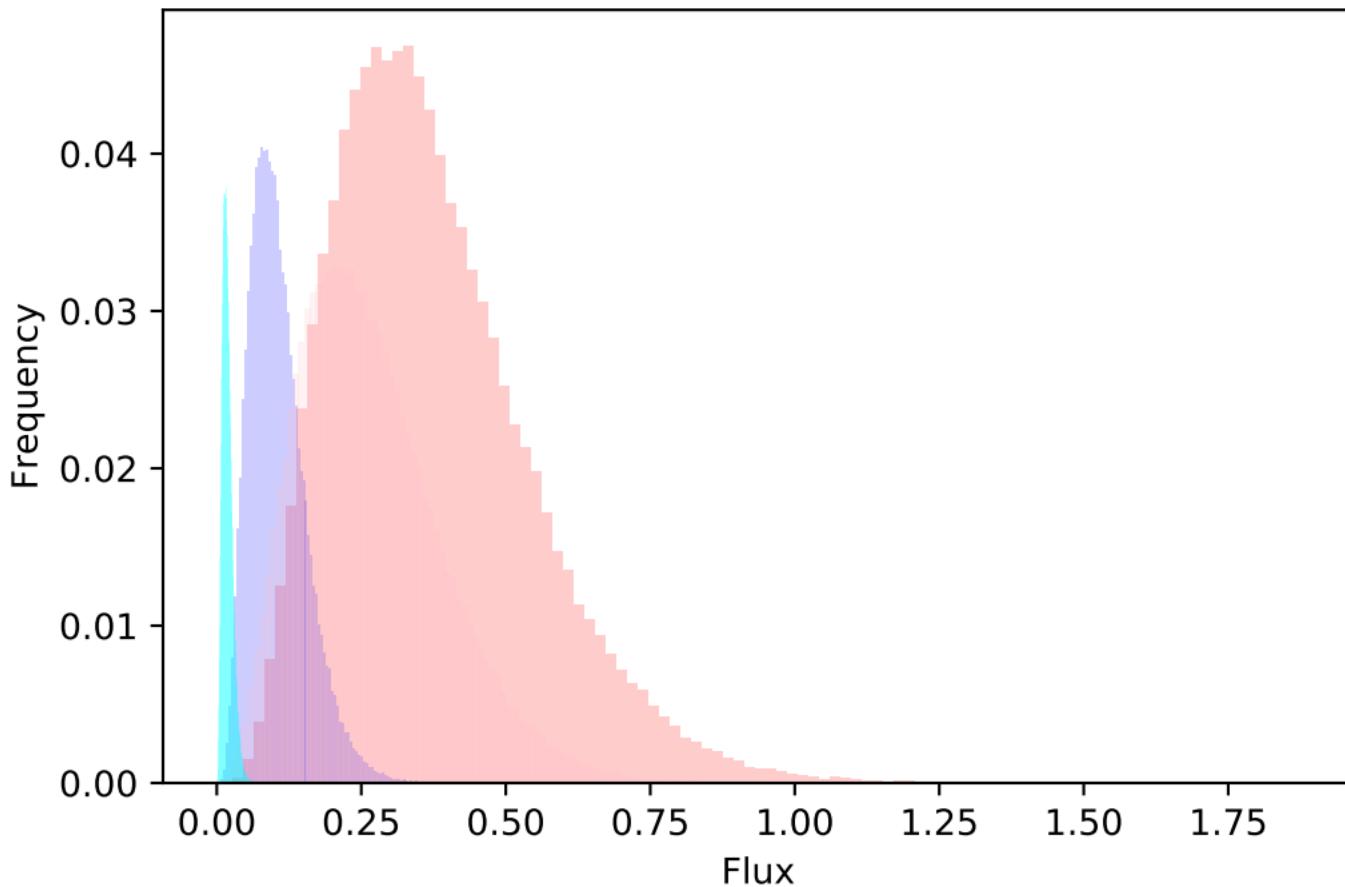
210 : H\_h + Pyr\_h + ThPP\_h --> CO2\_h + H\_DASH\_Eth\_DASH\_ThPP\_h



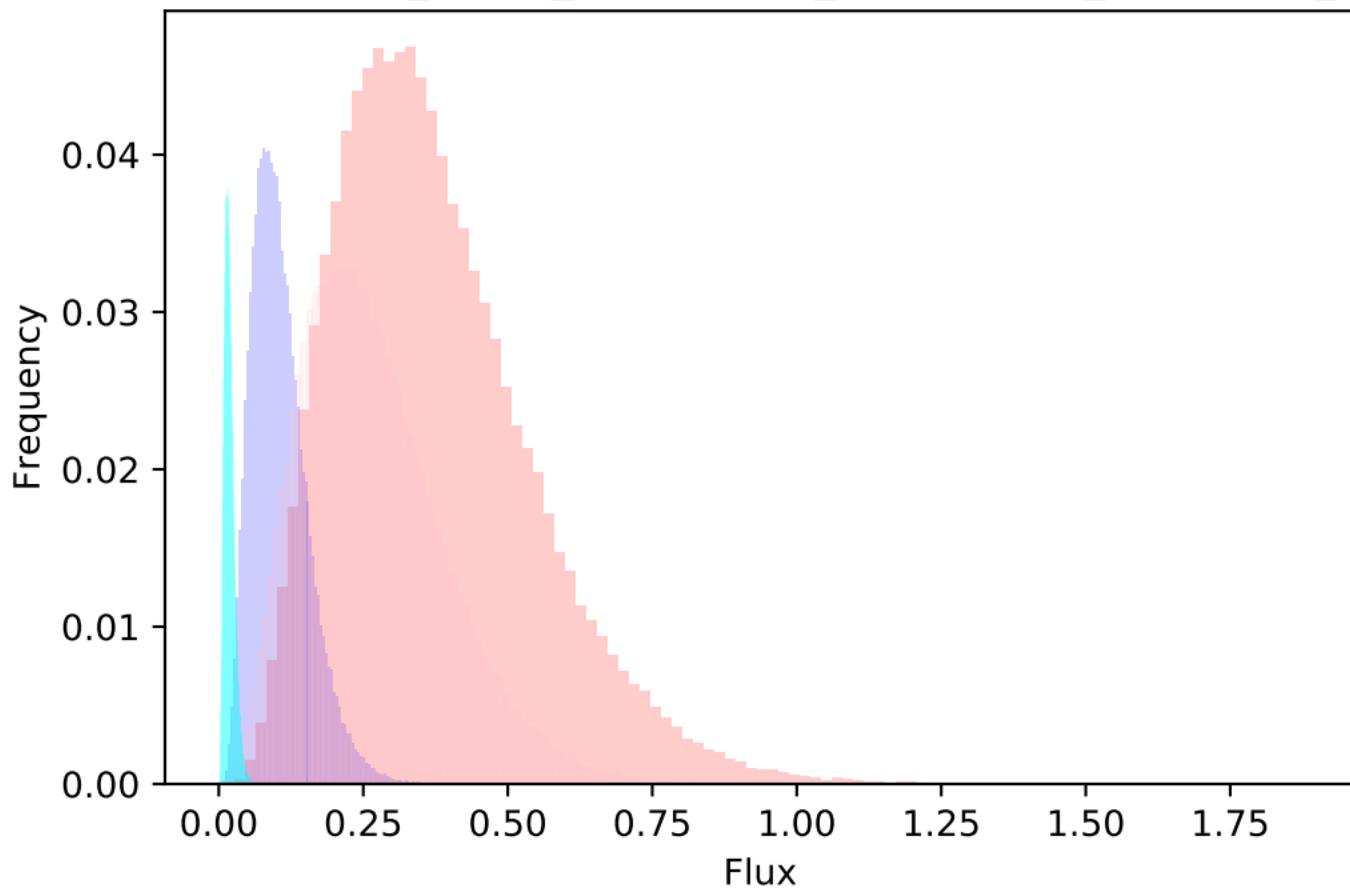
211 : H\_DASH\_Eth\_DASH\_ThPP\_h + OB\_h --> AHB\_h + ThPP\_h



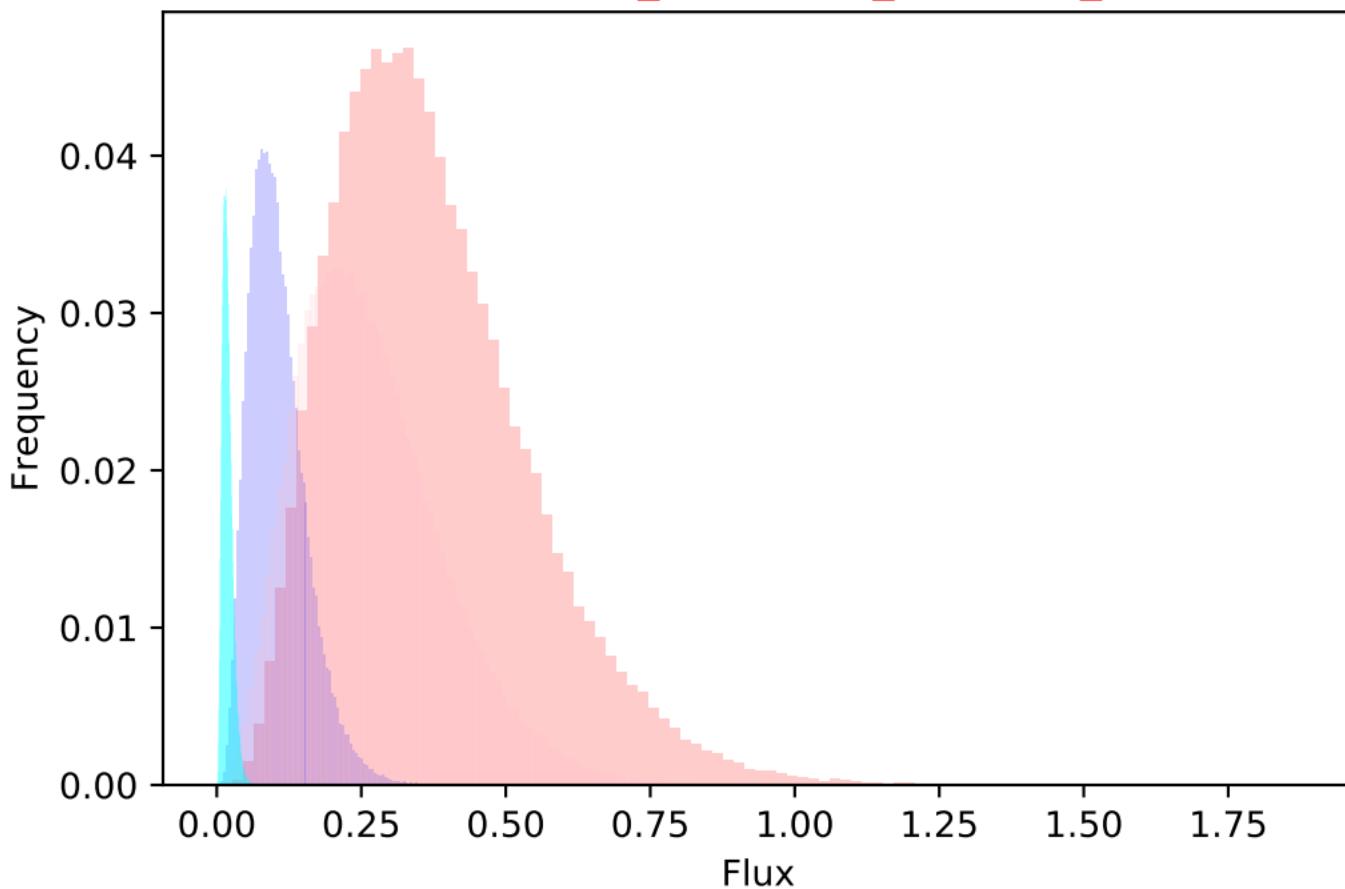
212 : AHB\_h <=> HMOP\_h



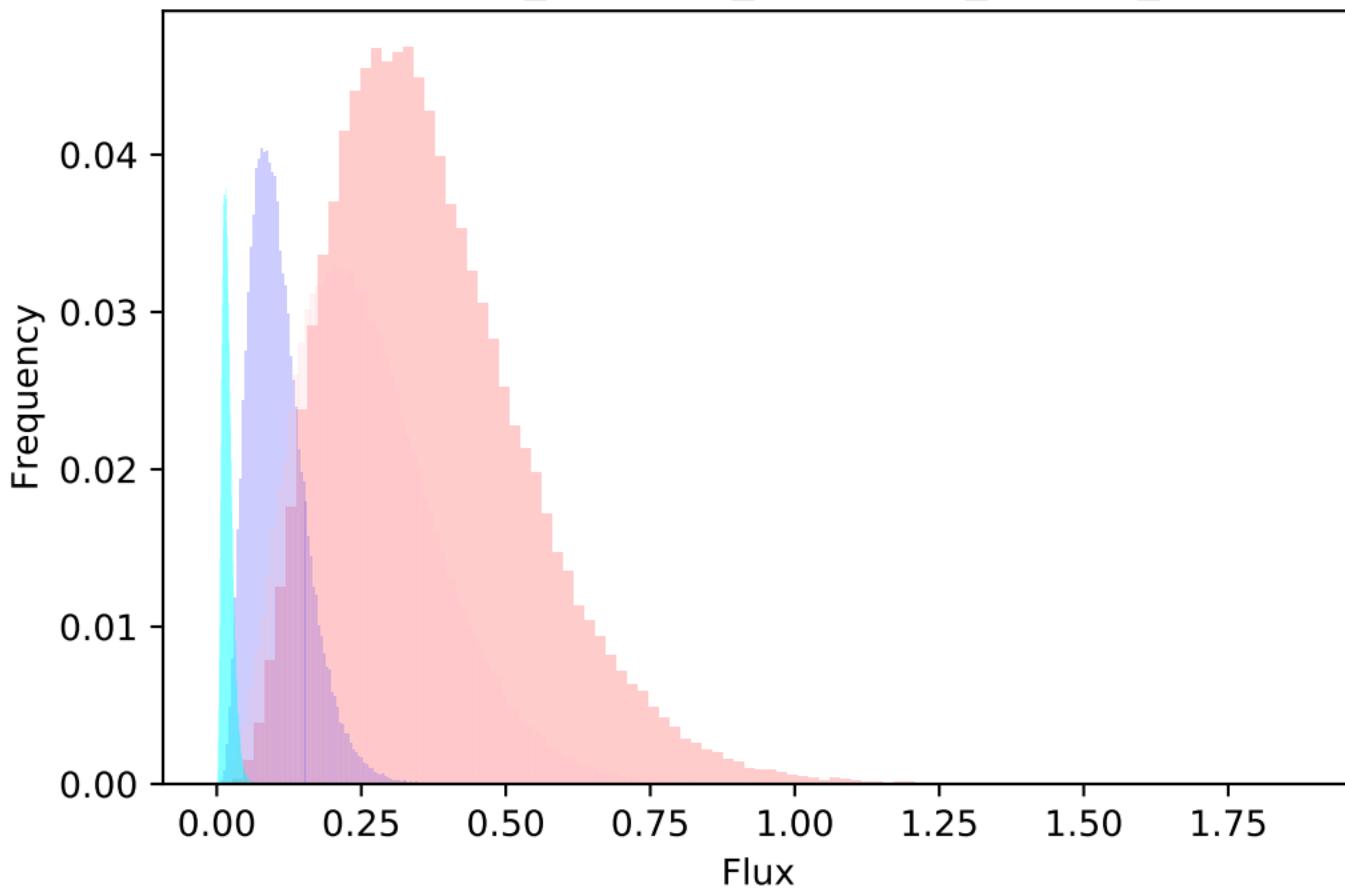
213 : HMOP\_h + H\_h + NADPH\_h --> DHMP\_h + NADP\_h



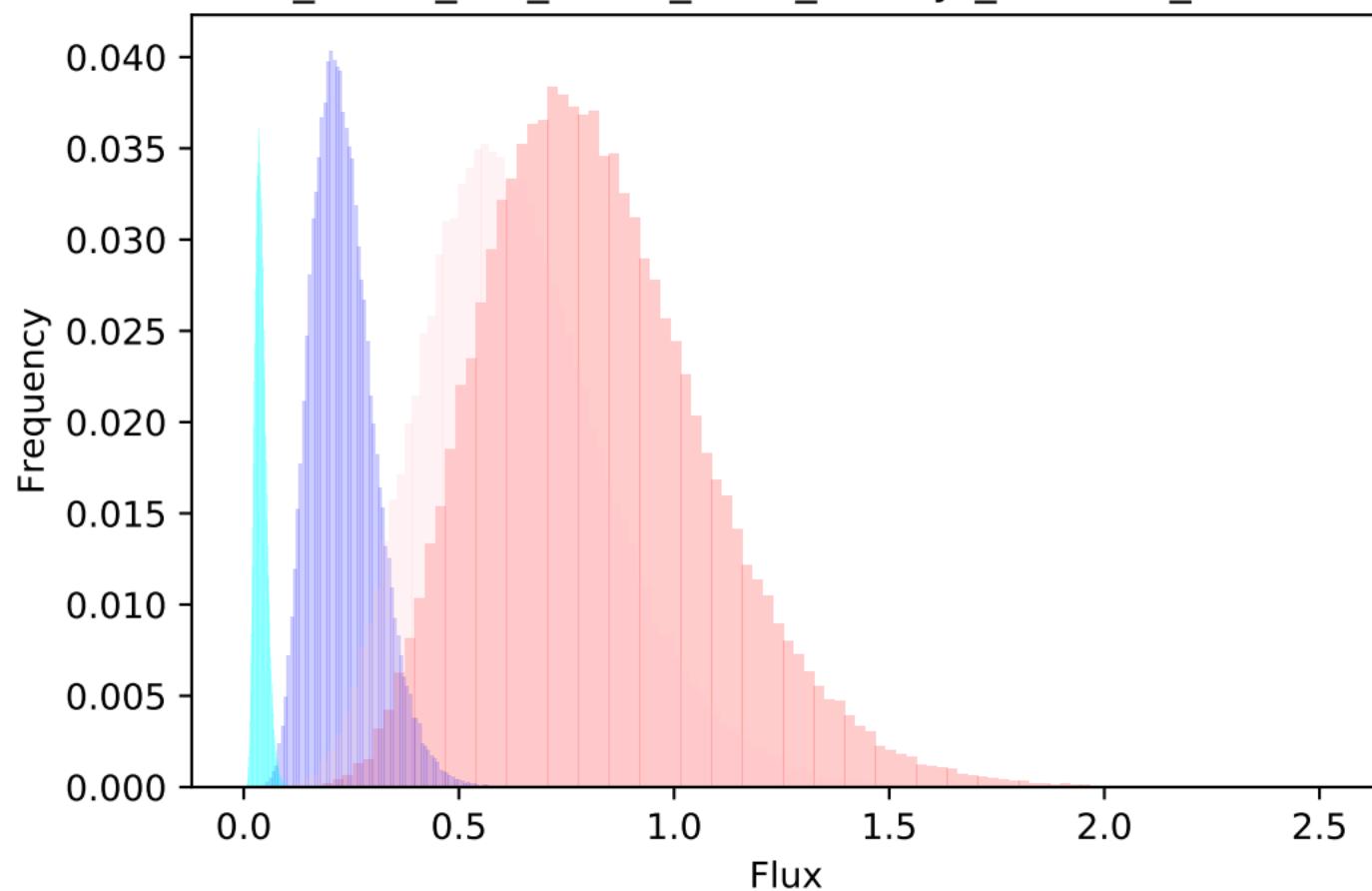
214 : DHMP\_h --> H2O\_h + MOP\_h



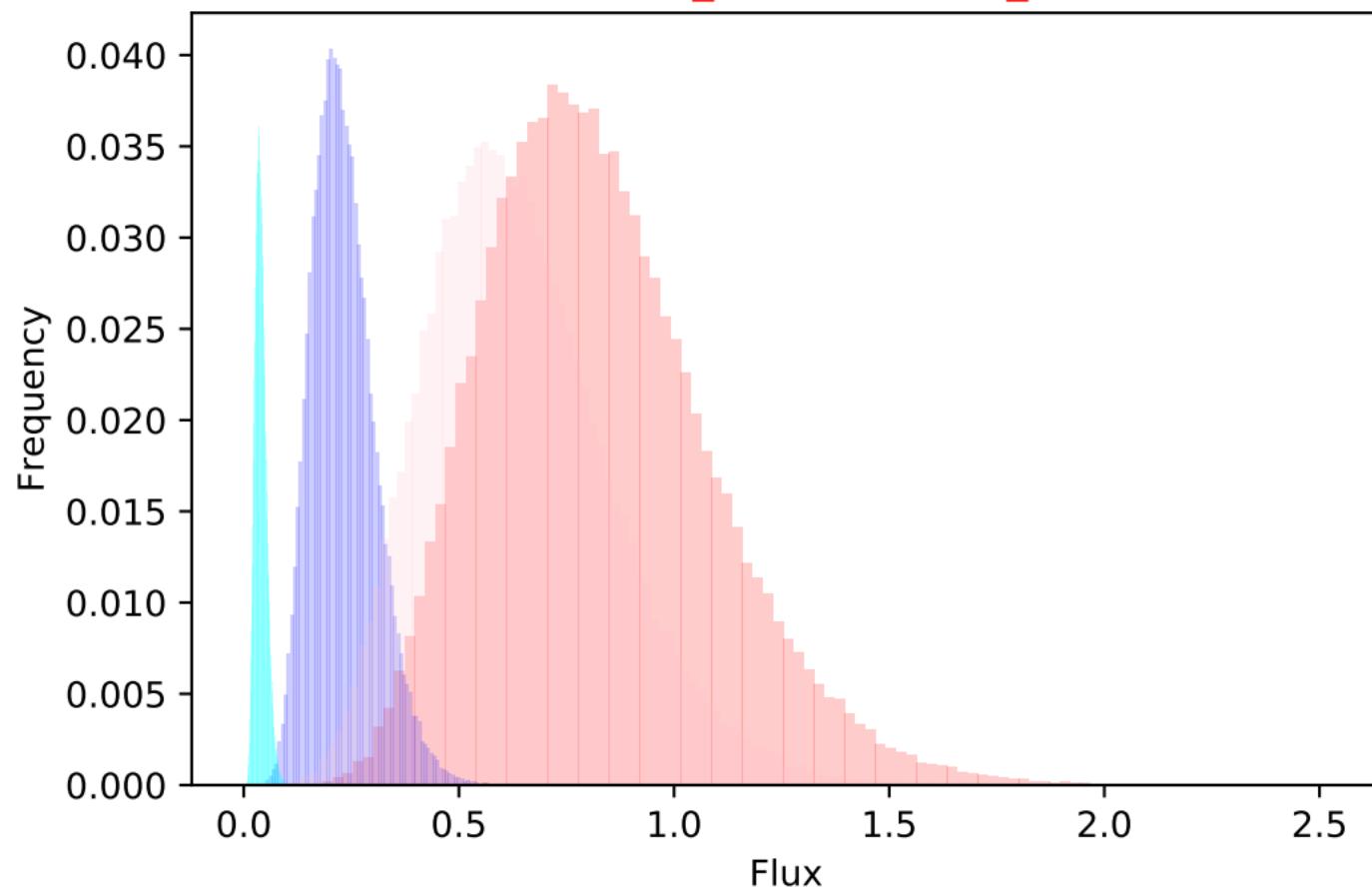
215 : Glu\_h + MOP\_h <=> Ile\_h + KG\_h



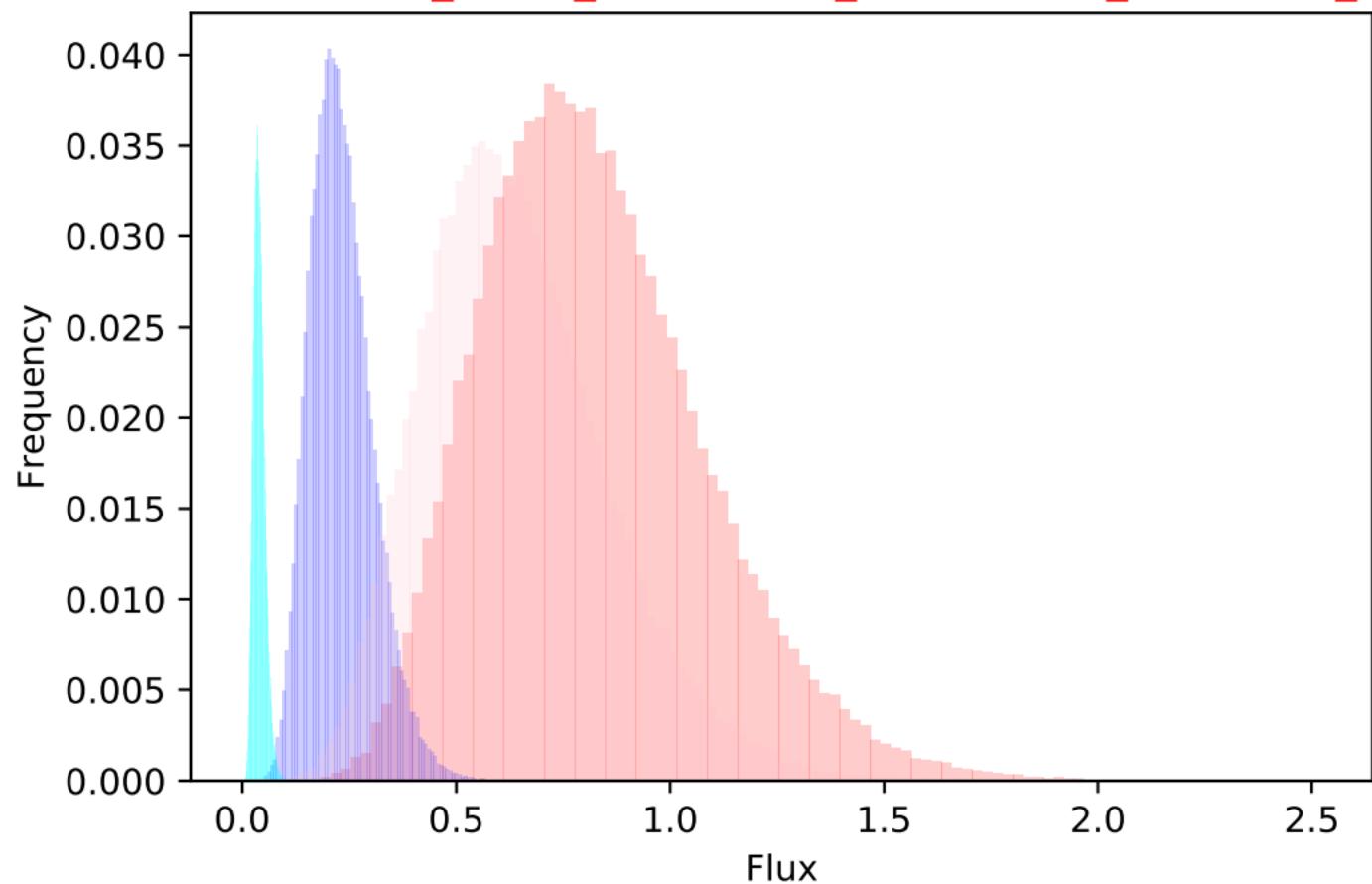
216 : H\_DASH\_Eth\_DASH\_ThPP\_h + Pyr\_h --> AL\_h + ThPP\_h



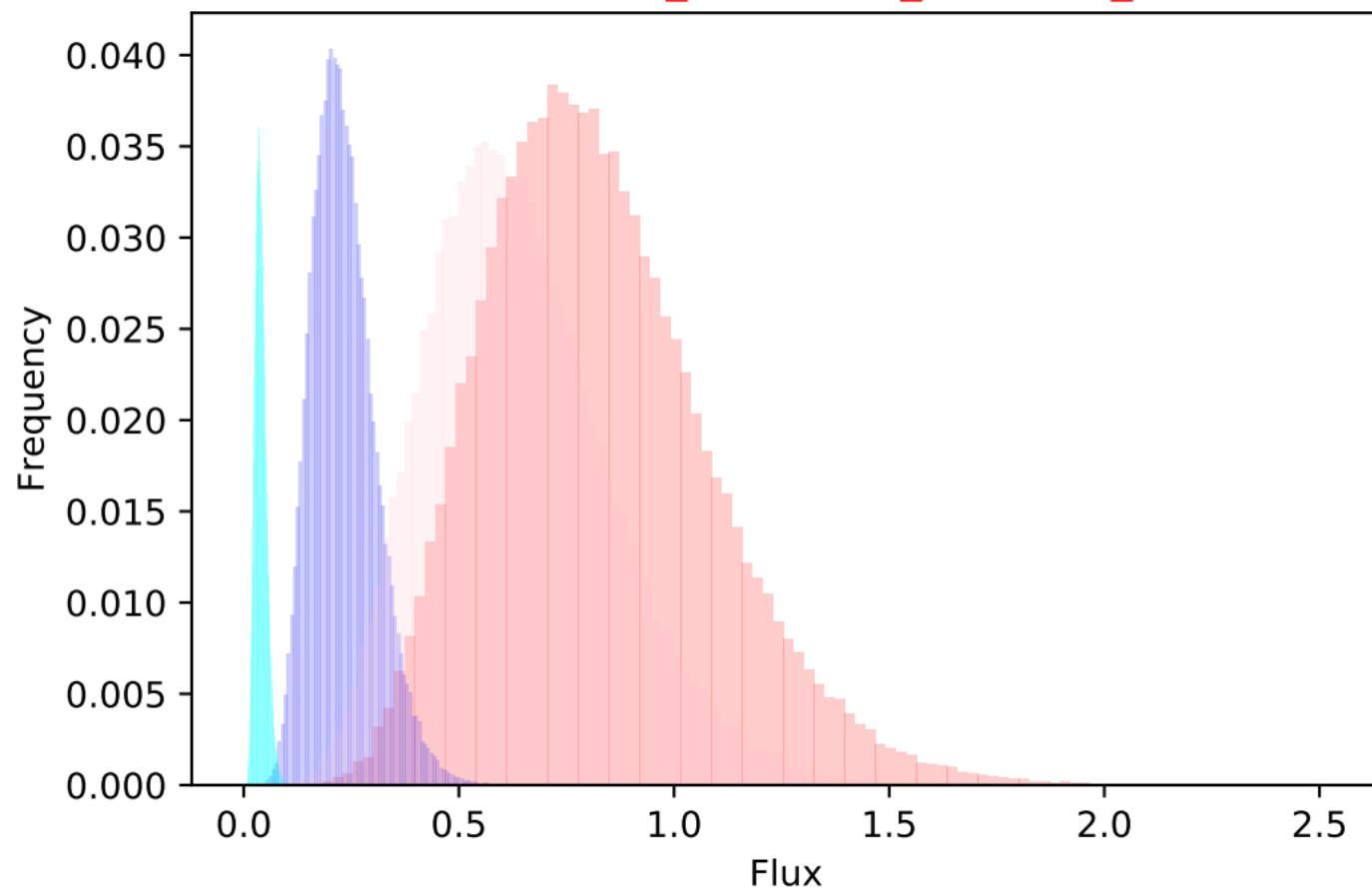
217 : AL\_h <=> HMOB\_h

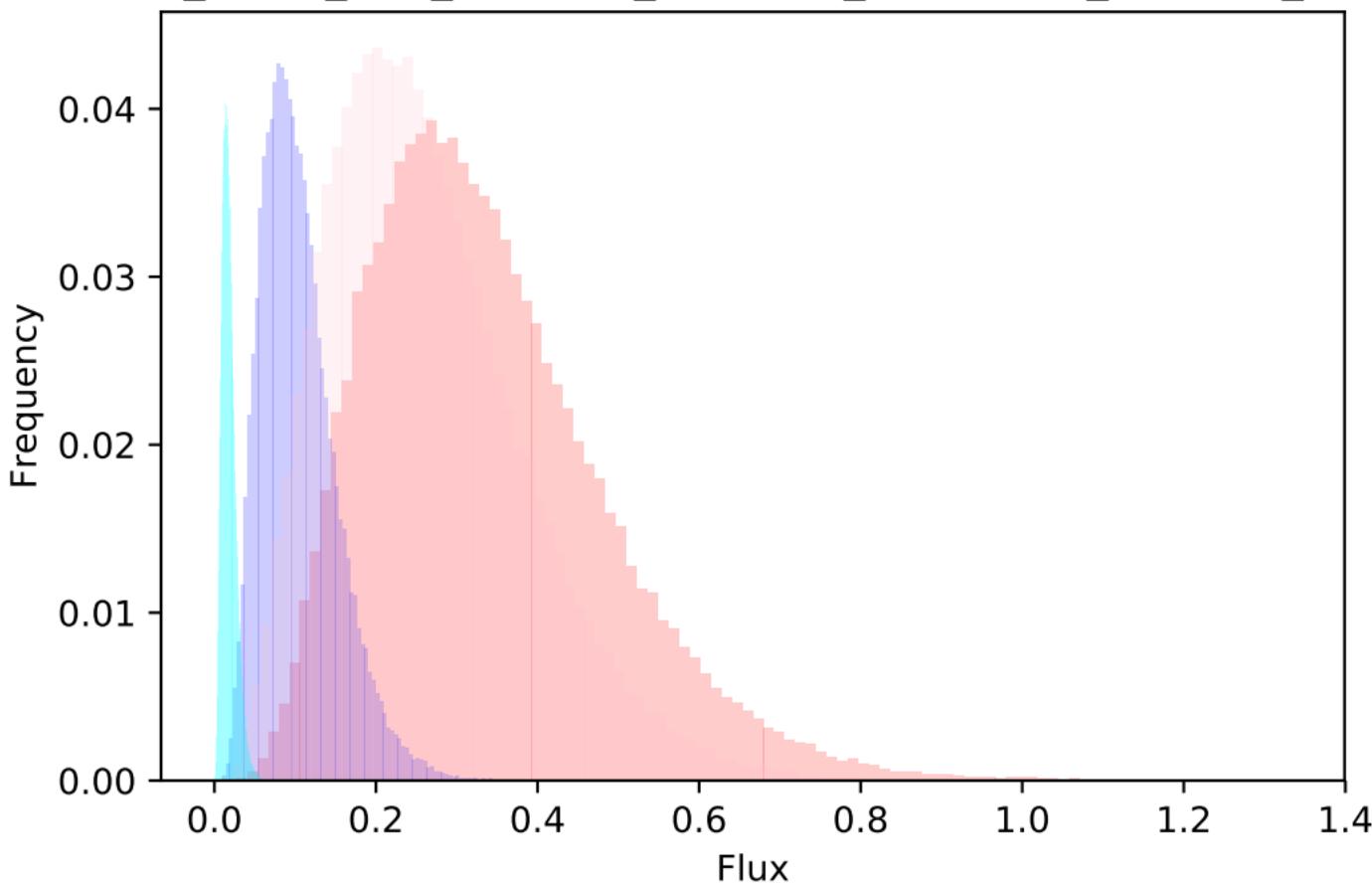


218 : HMOB\_h + H\_h + NADPH\_h --> DHMB\_h + NADP\_h

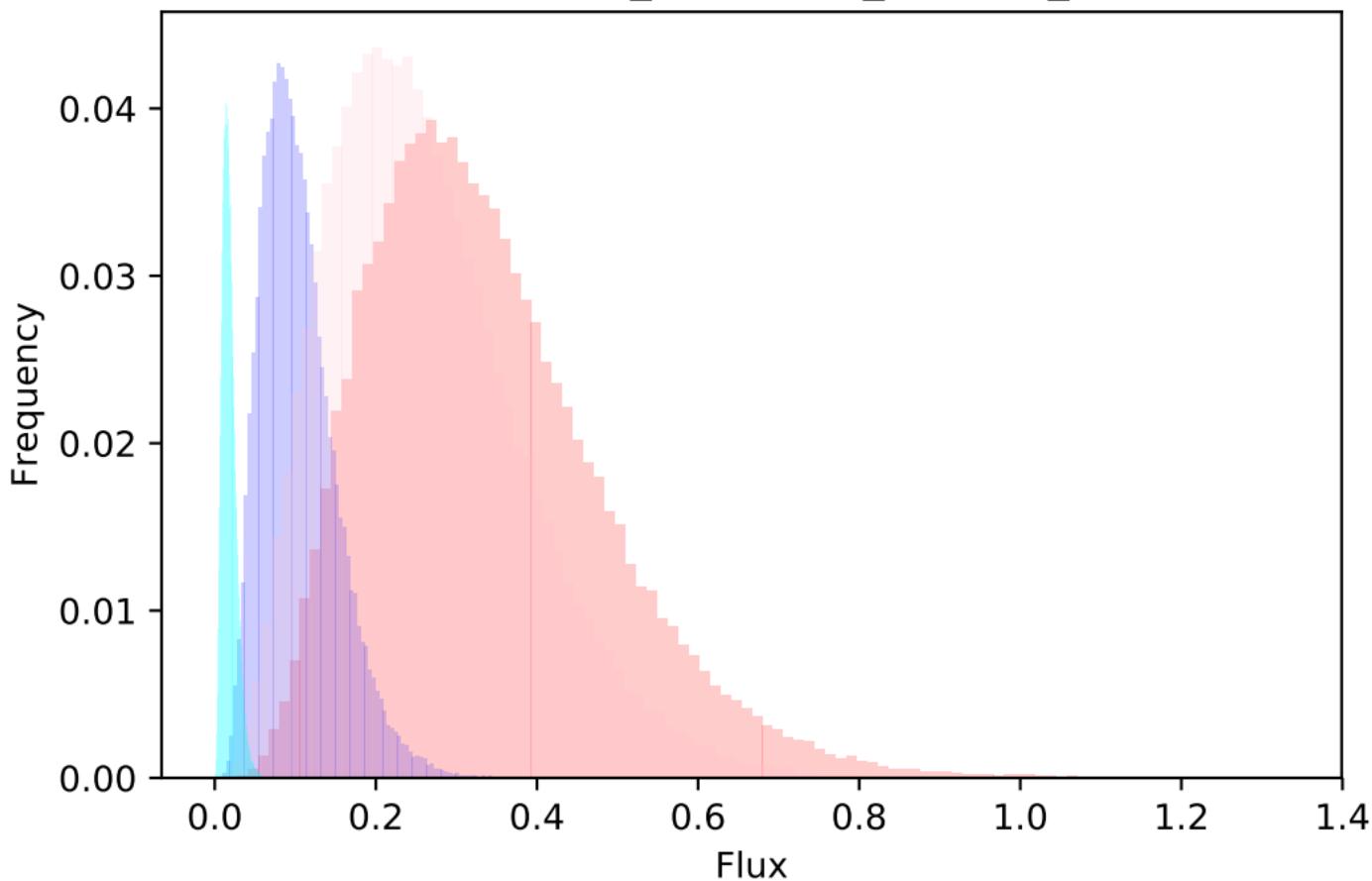


219 : DHMB\_h --> H2O\_h + MOB\_h

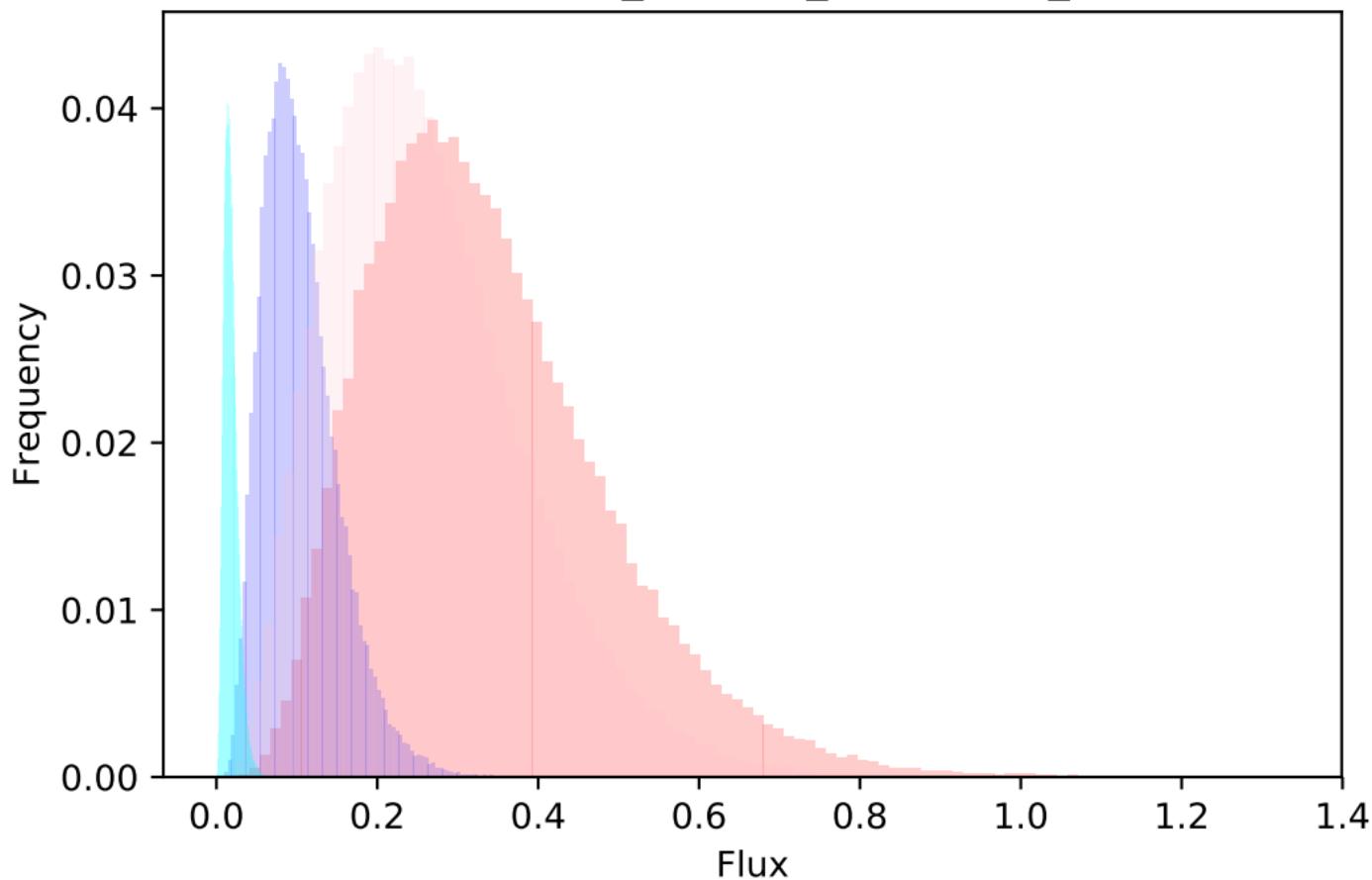




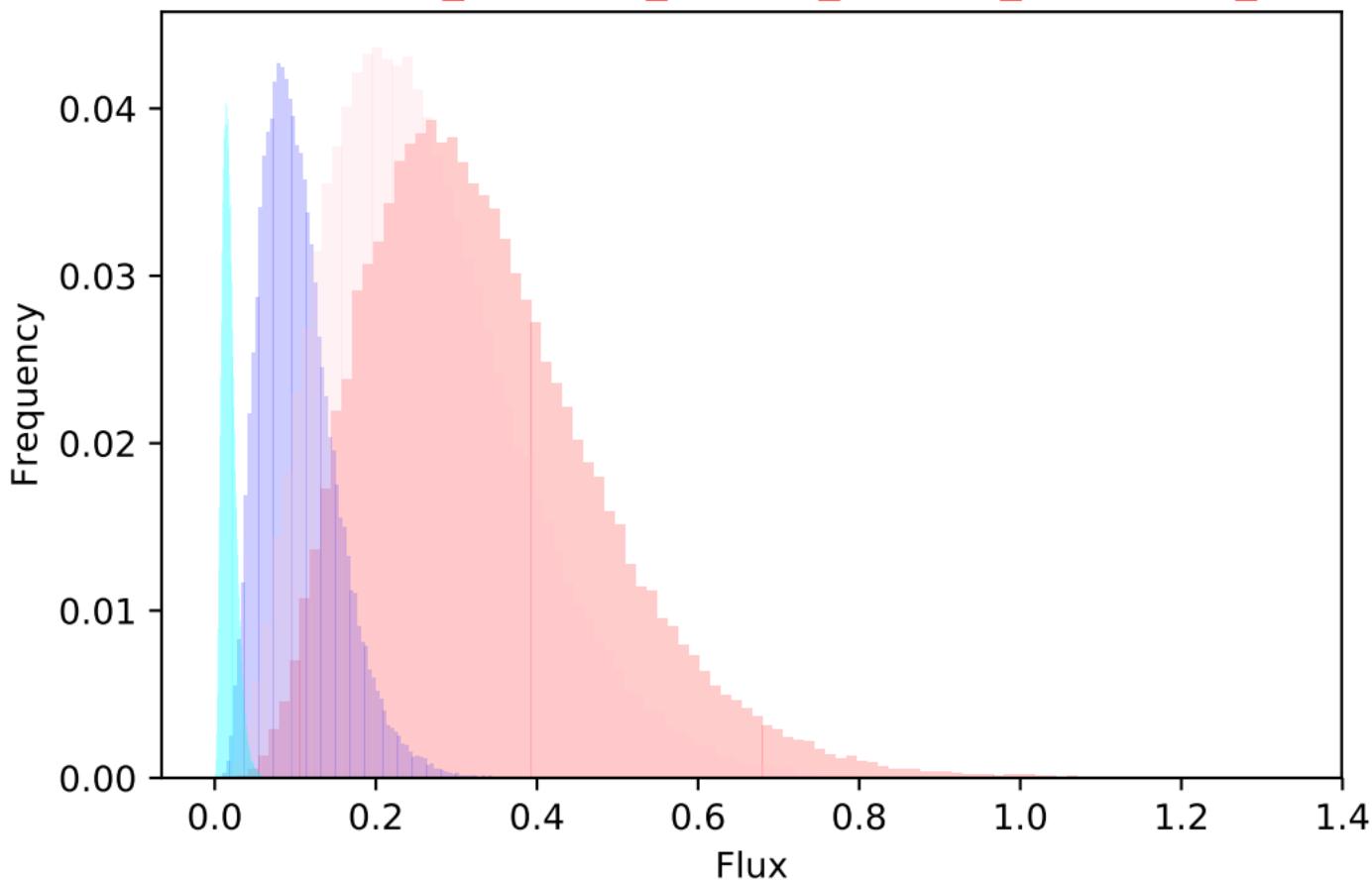
221 : 2IPM\_h --> H2O\_h + IPM\_h



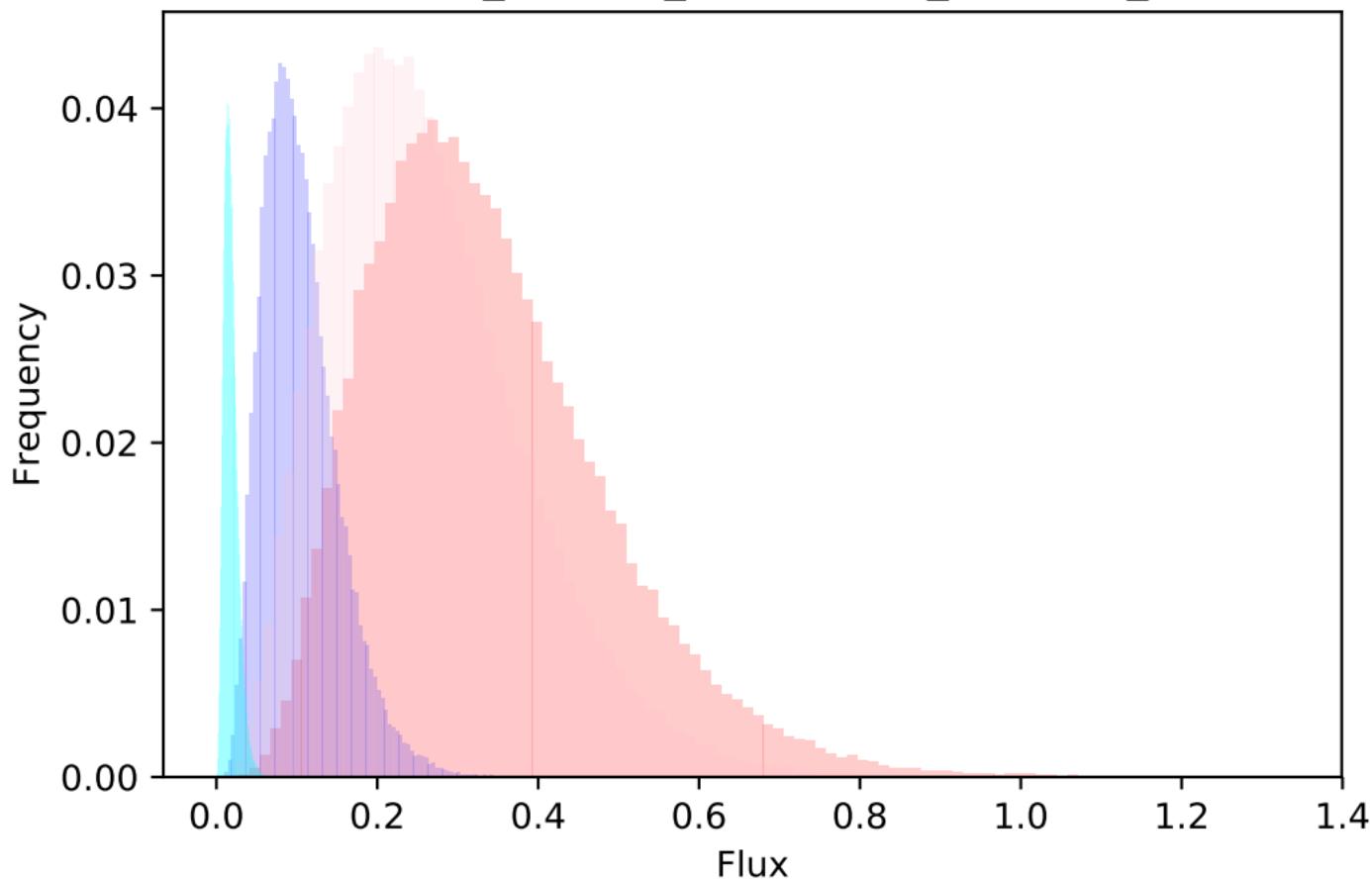
222 : H2O\_h + IPM\_h --> 3IPM\_h



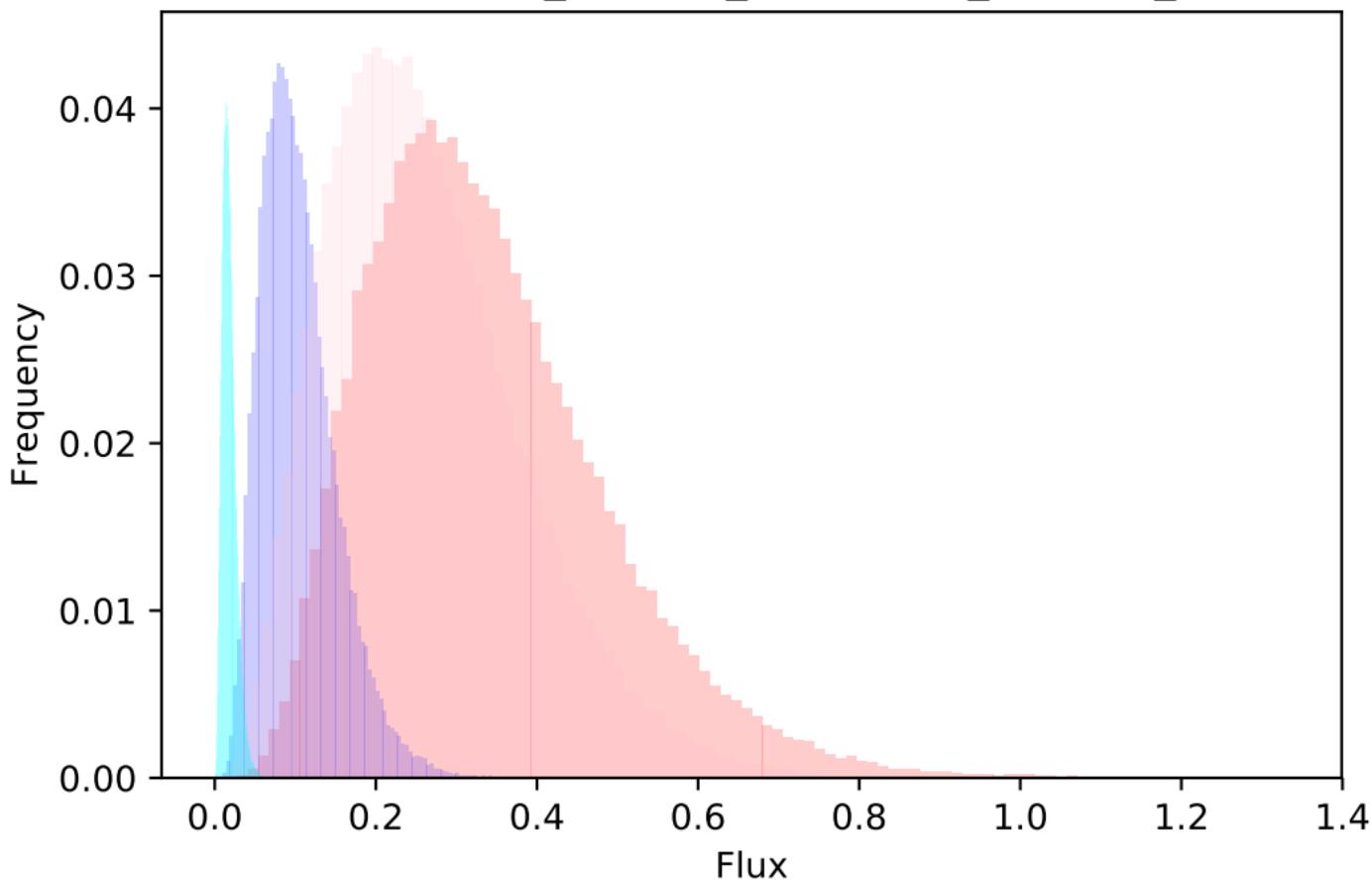
223 : 3IPM\_h + NAD\_h  $\rightarrow$  H\_h + IPO\_h + NADH\_h



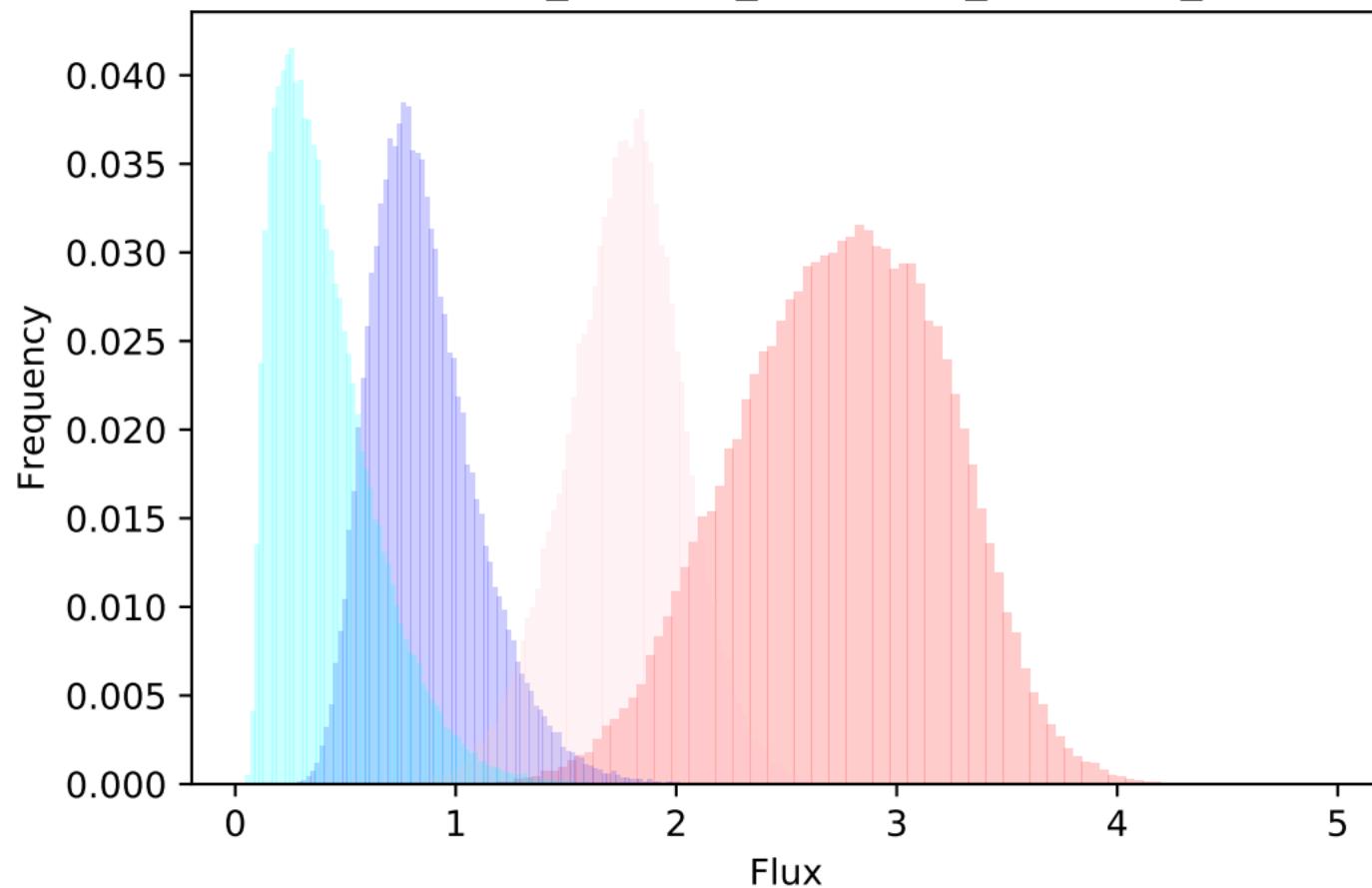
224 : H\_h + IPO\_h --> 4MOP\_h + CO2\_h



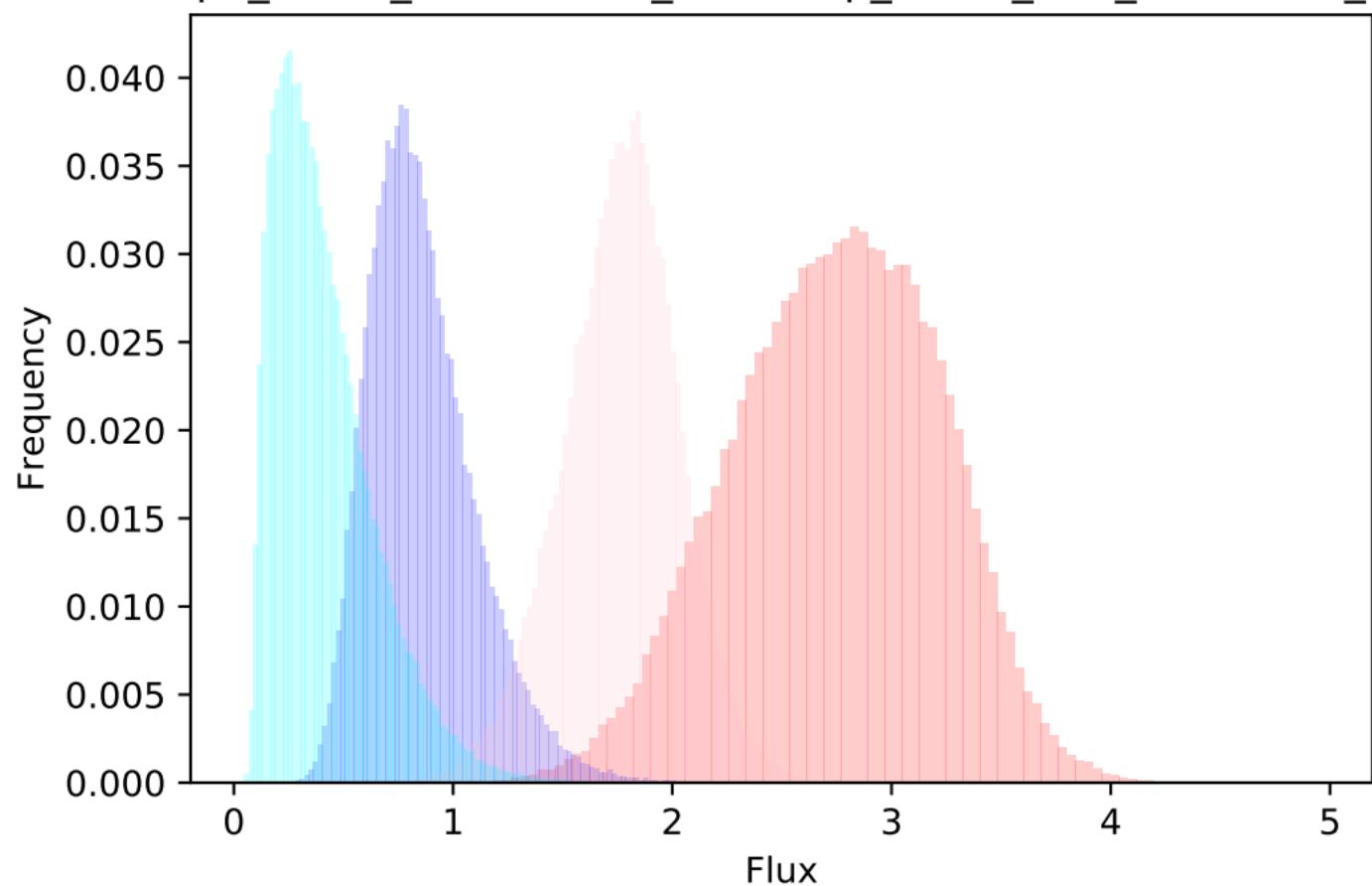
225 : 4MOP\_h + Glu\_h <=> KG\_h + Leu\_h



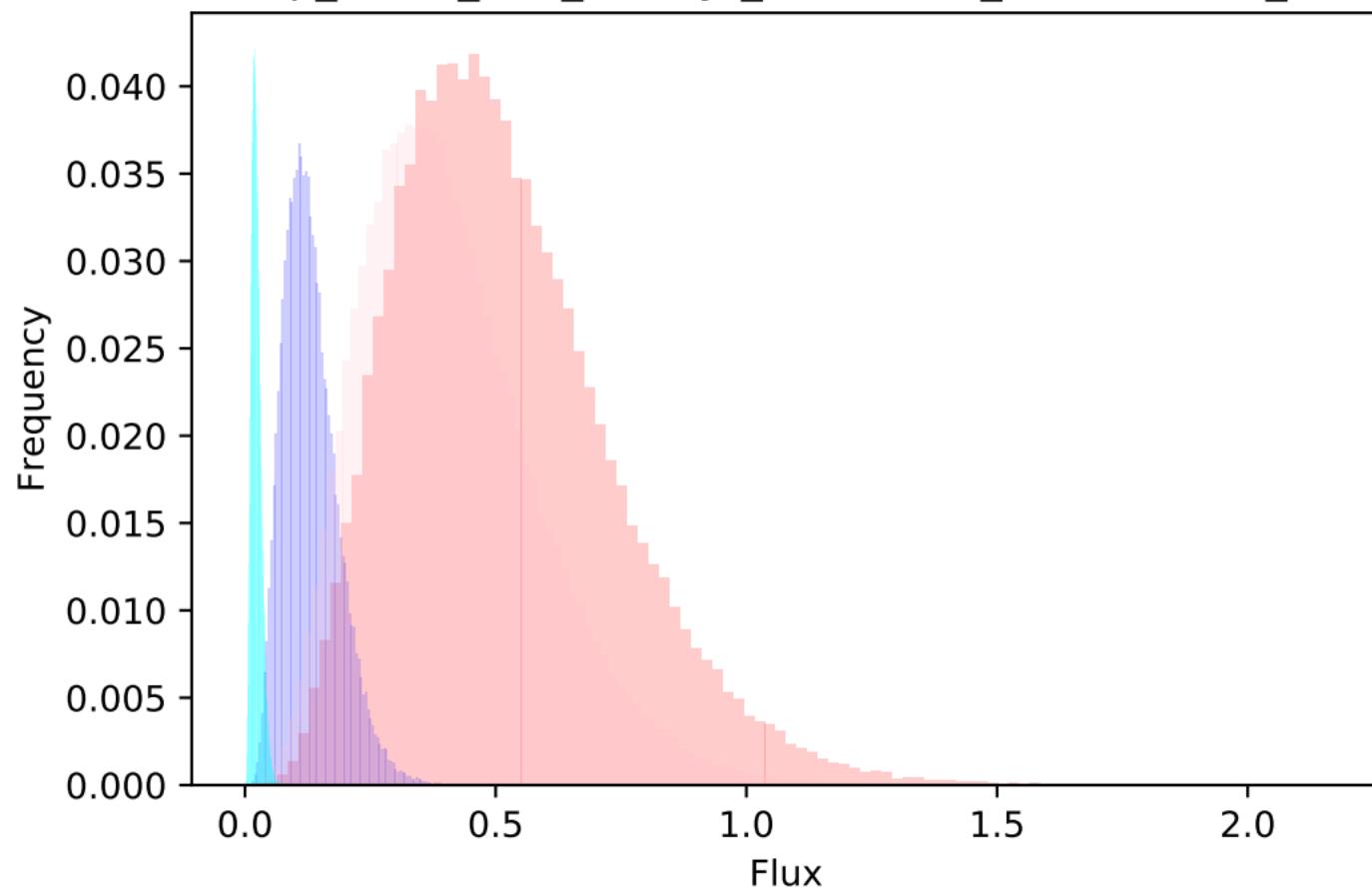
226 : ATP\_h + Asp\_h --> ADP\_h + AspP\_h



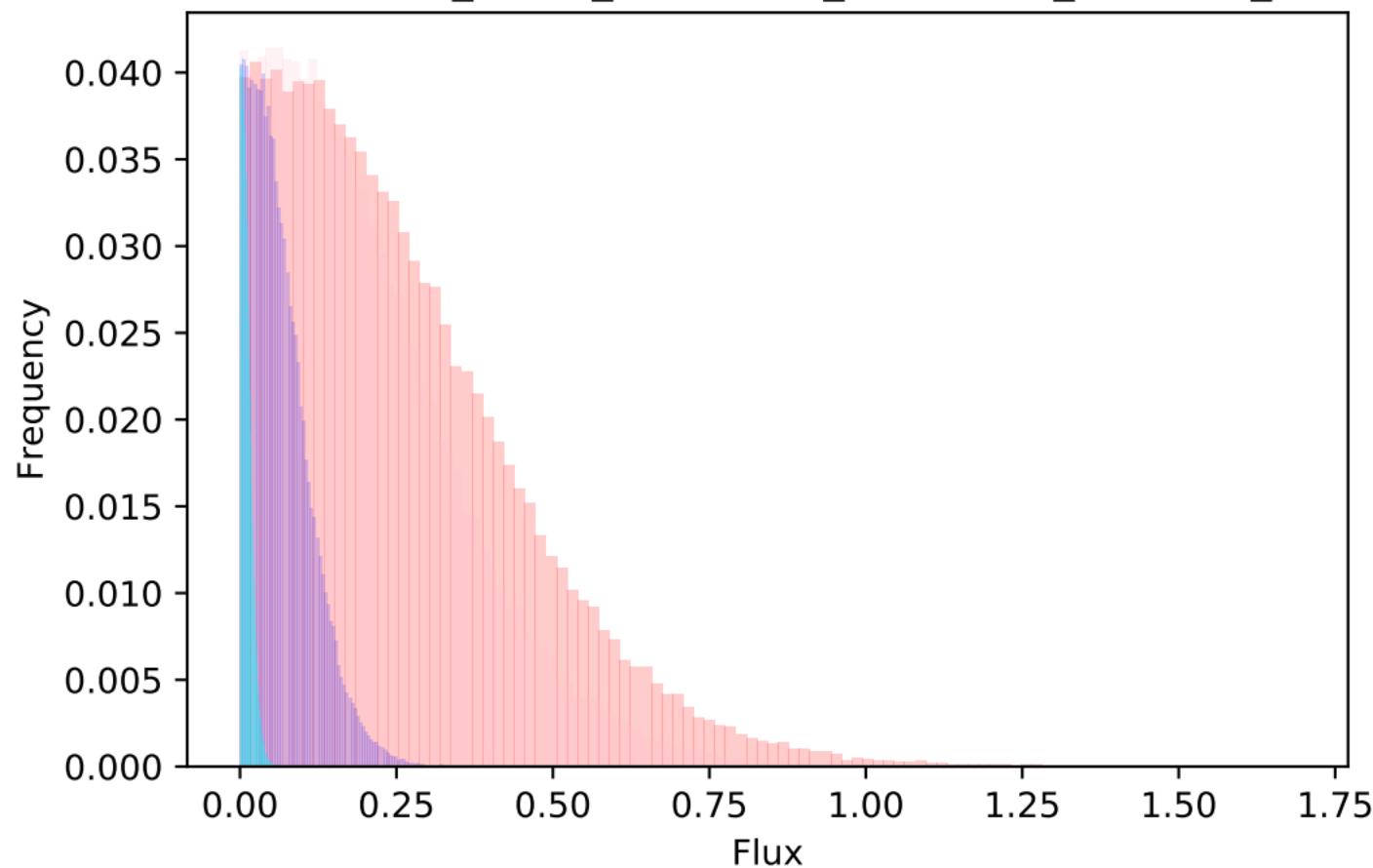
227 : AspP\_h + H\_h + NADPH\_h --> Asp\_DASH\_SeA\_h + NADP\_h + Pi\_h



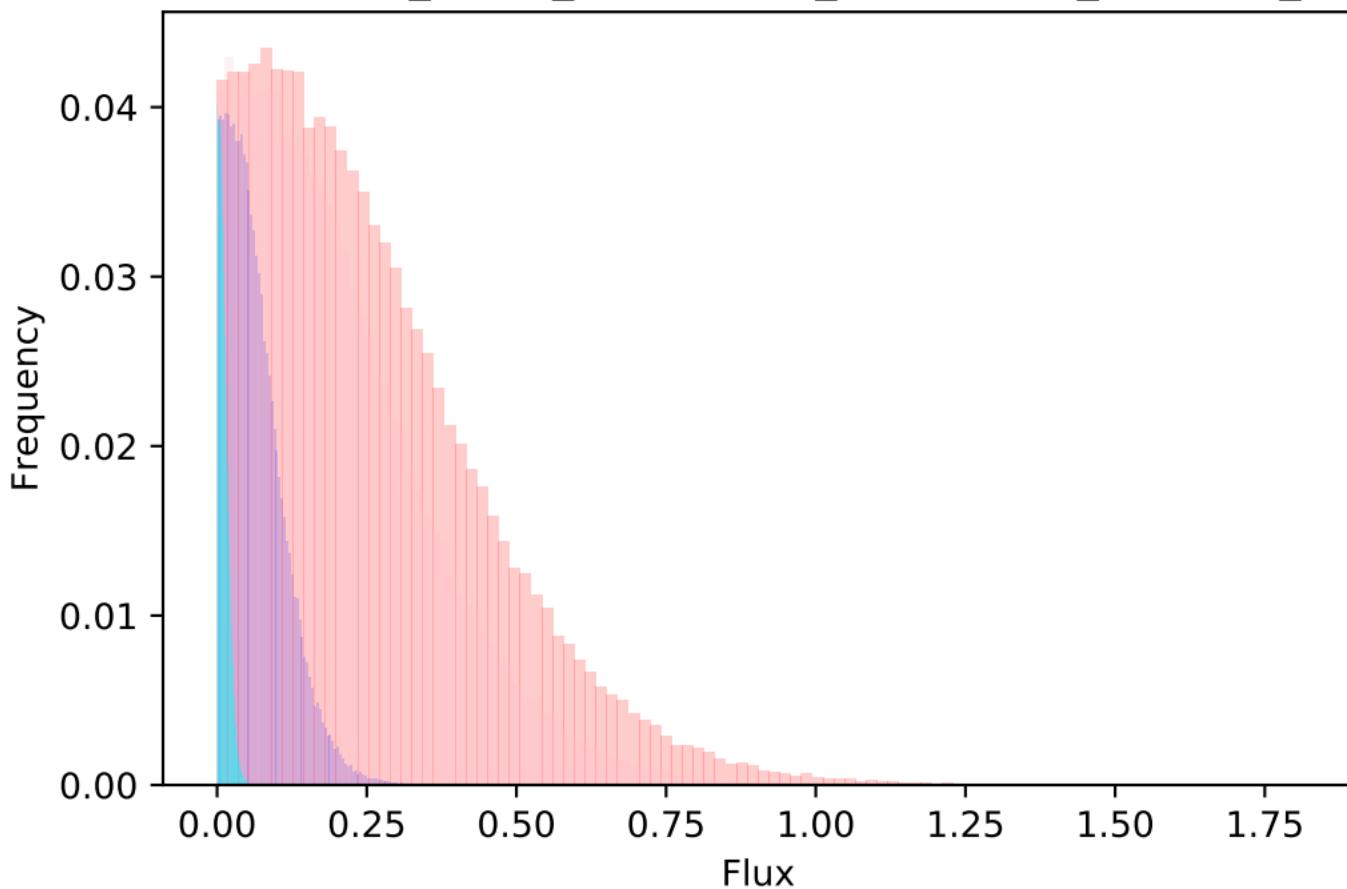
228 : Asp\_DASH\_SeA\_h + Pyr\_h --> DHD\_h + 2.0 H2O\_h + H\_h



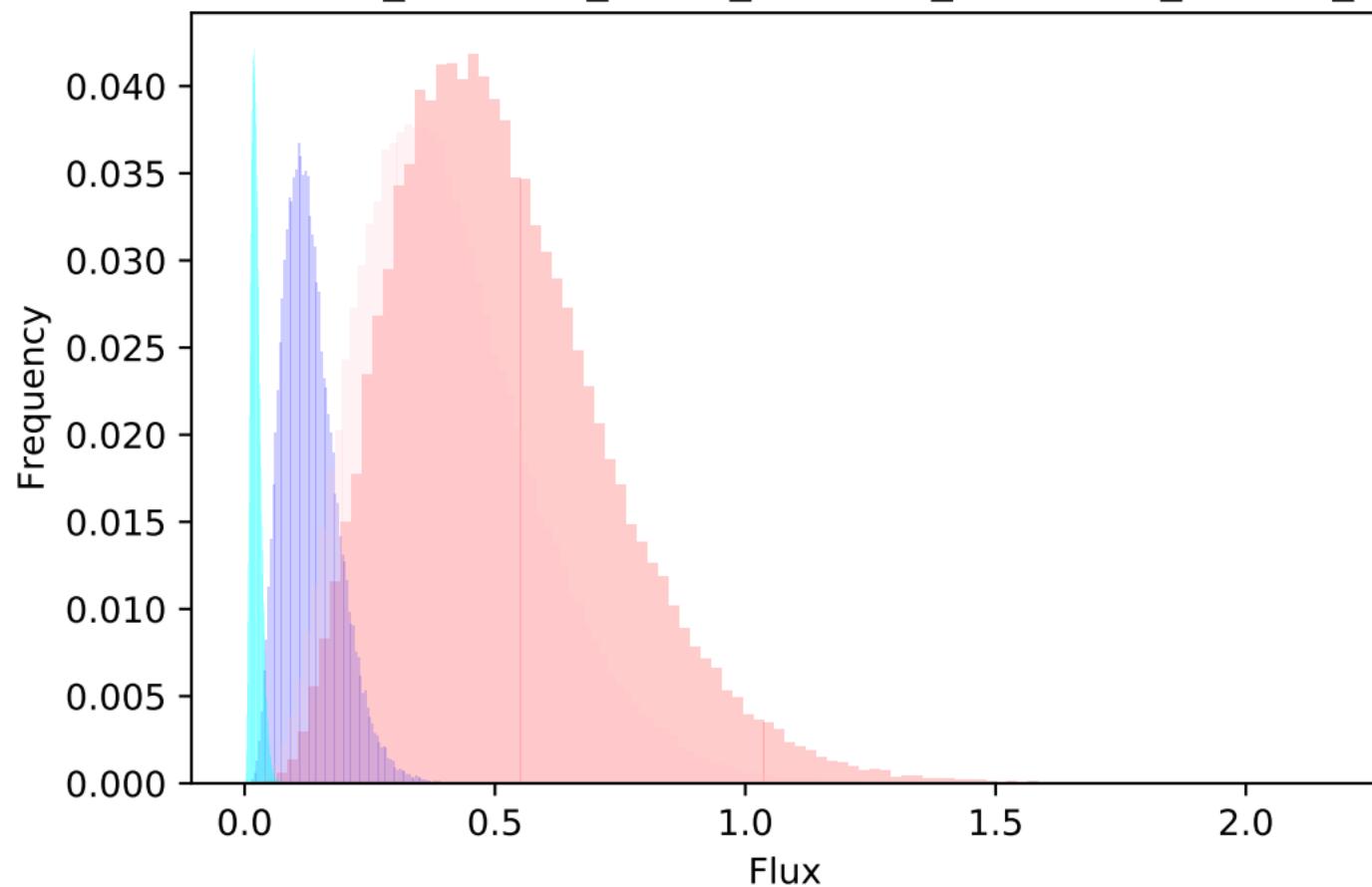
229 : DHD\_h + H\_h + NADH\_h --> NAD\_h + THD\_h



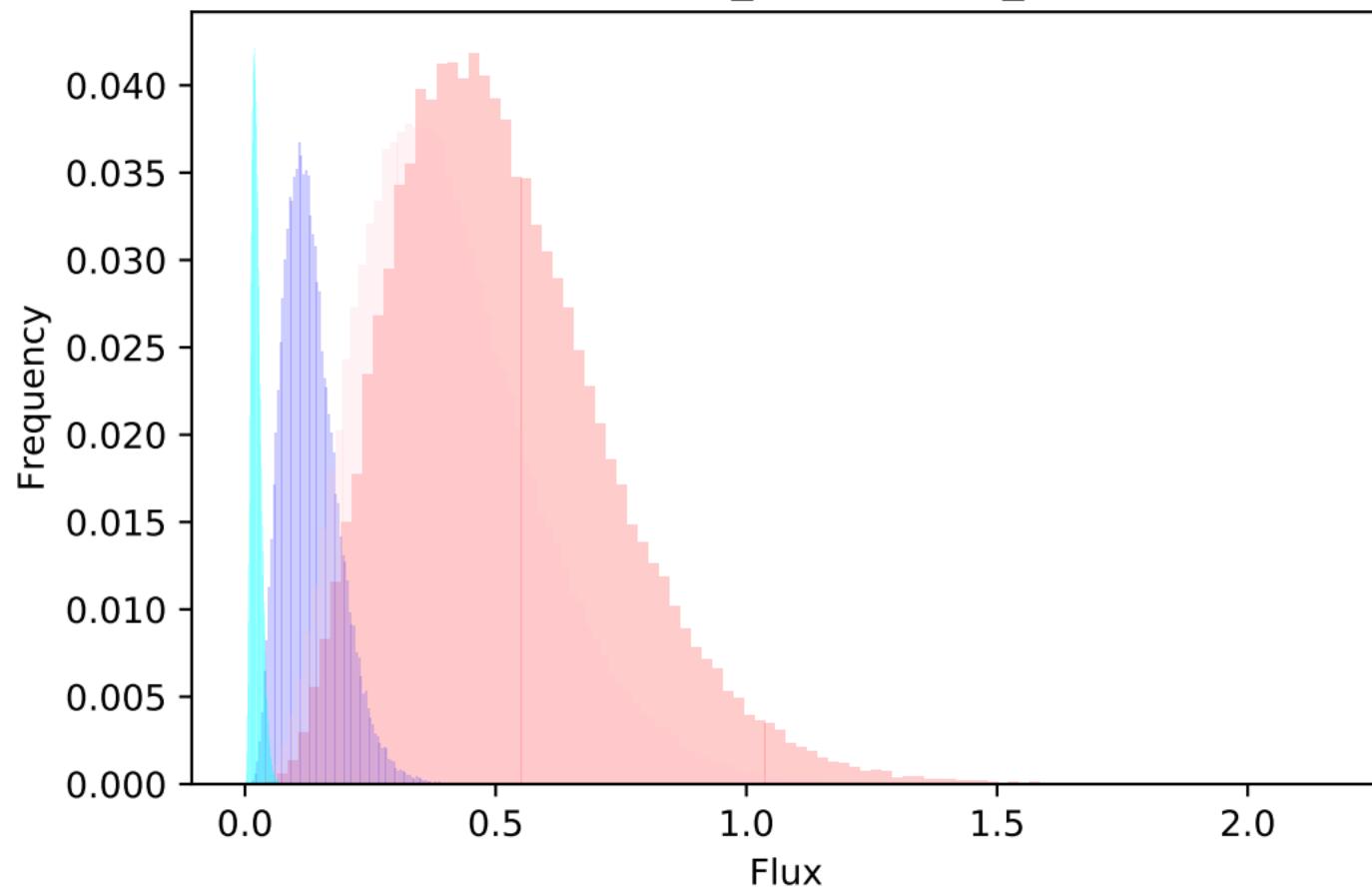
230 : DHD\_h + H\_h + NADPH\_h --> NADP\_h + THD\_h



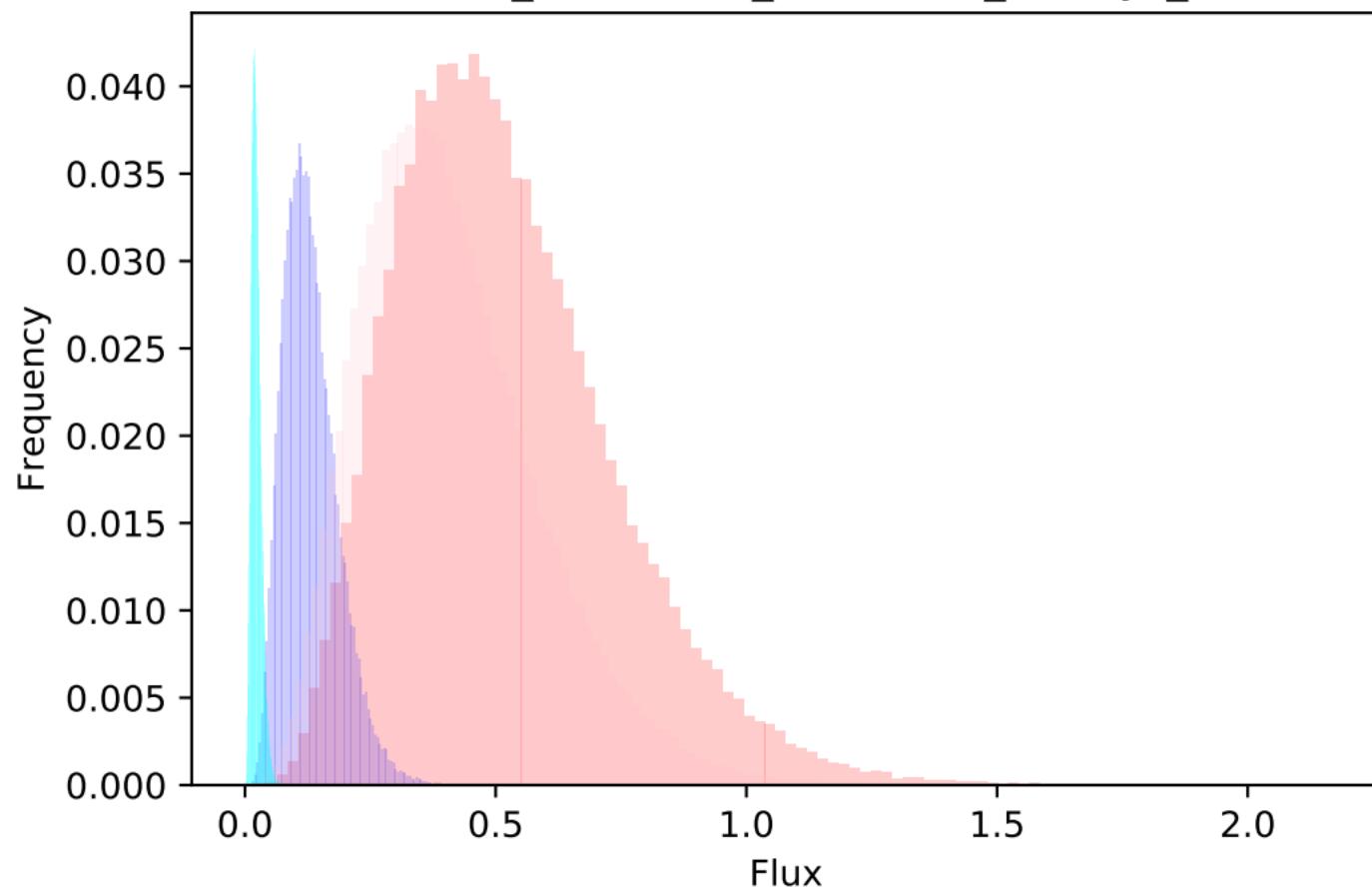
231 : Glu\_h + H2O\_h + H\_h + THD\_h --> DAP\_h + KG\_h



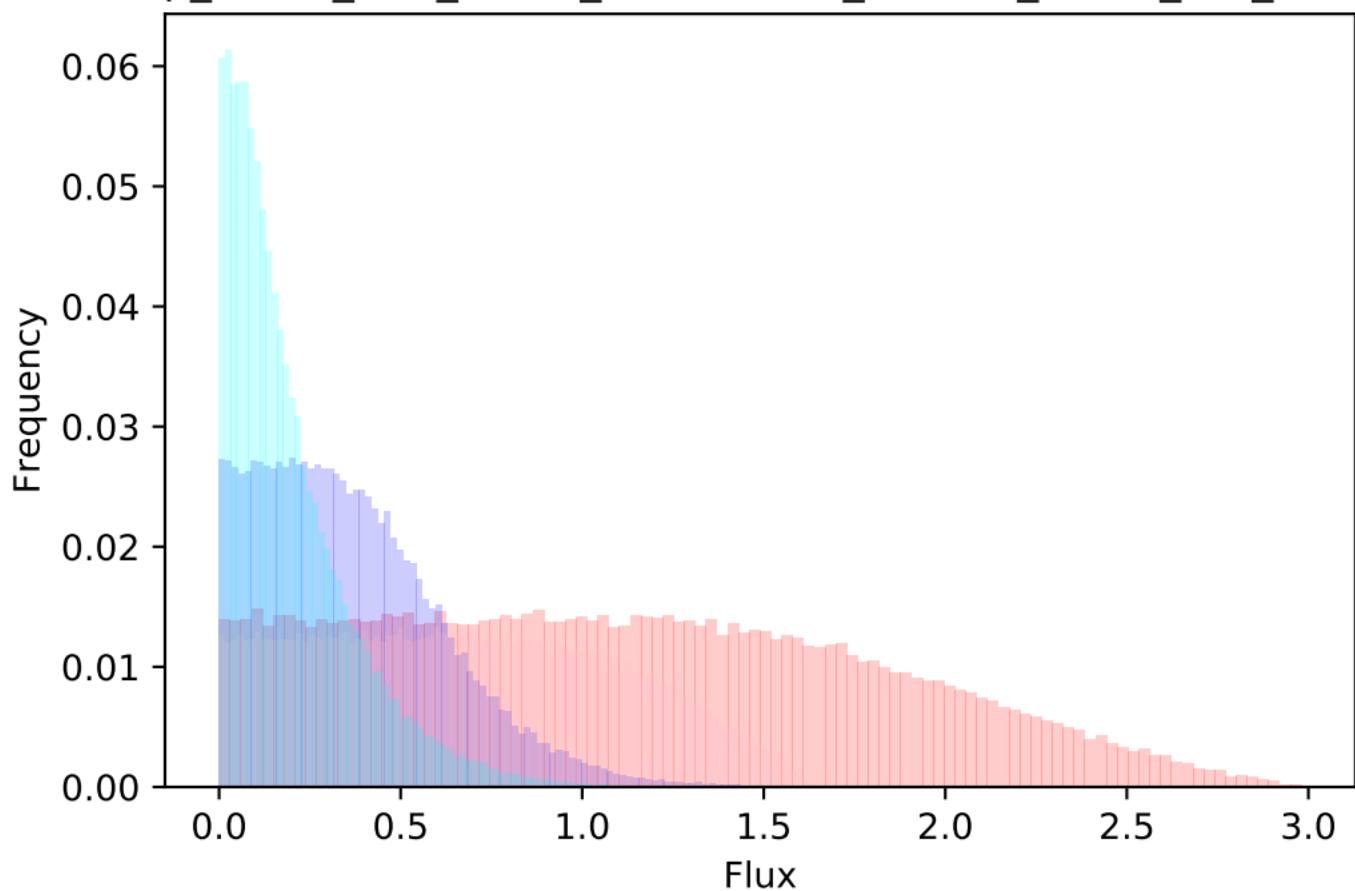
232 : DAP\_h --> mDAP\_h



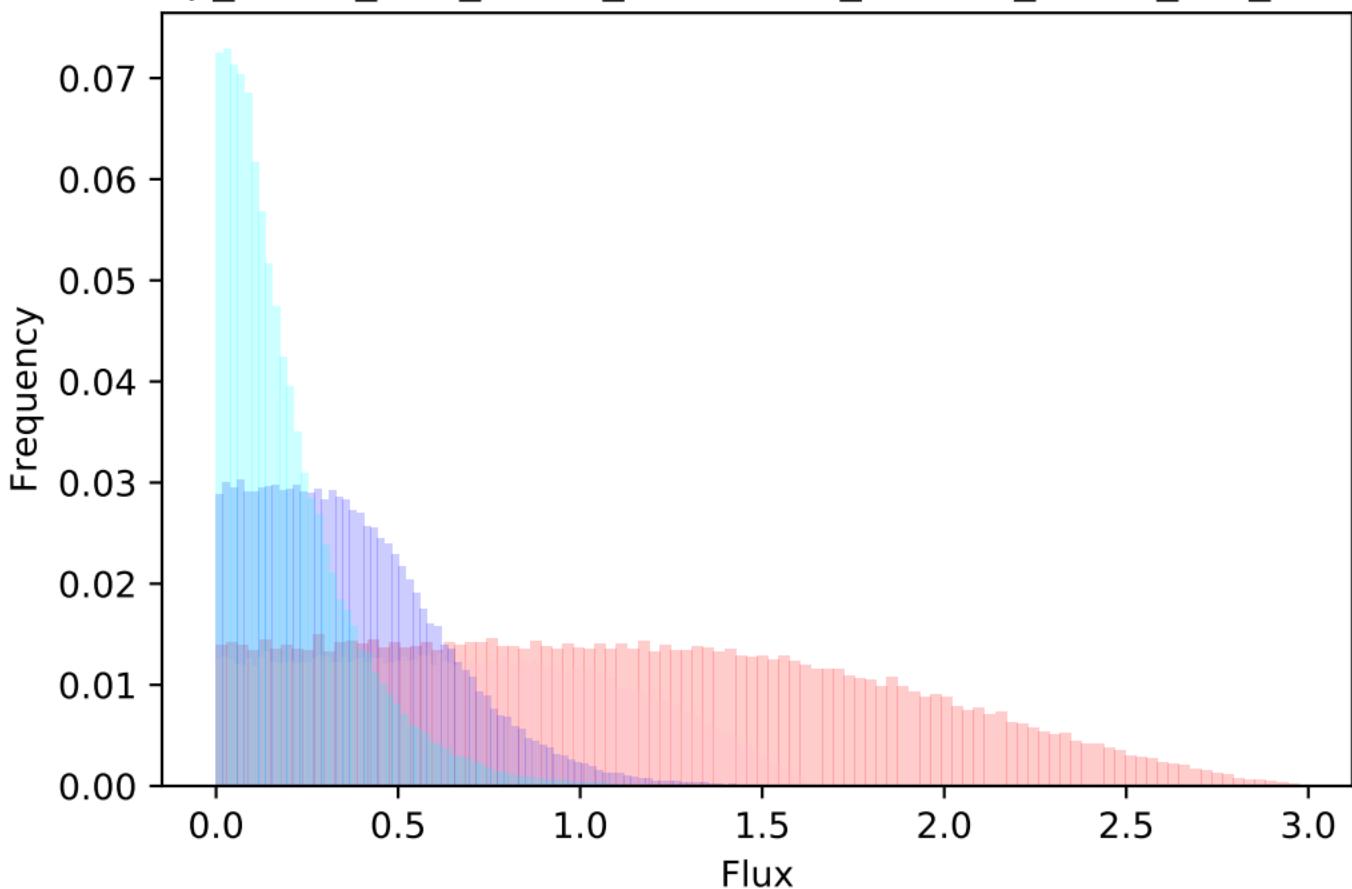
233 : H\_h + mDAP\_h --> CO2\_h + Lys\_h



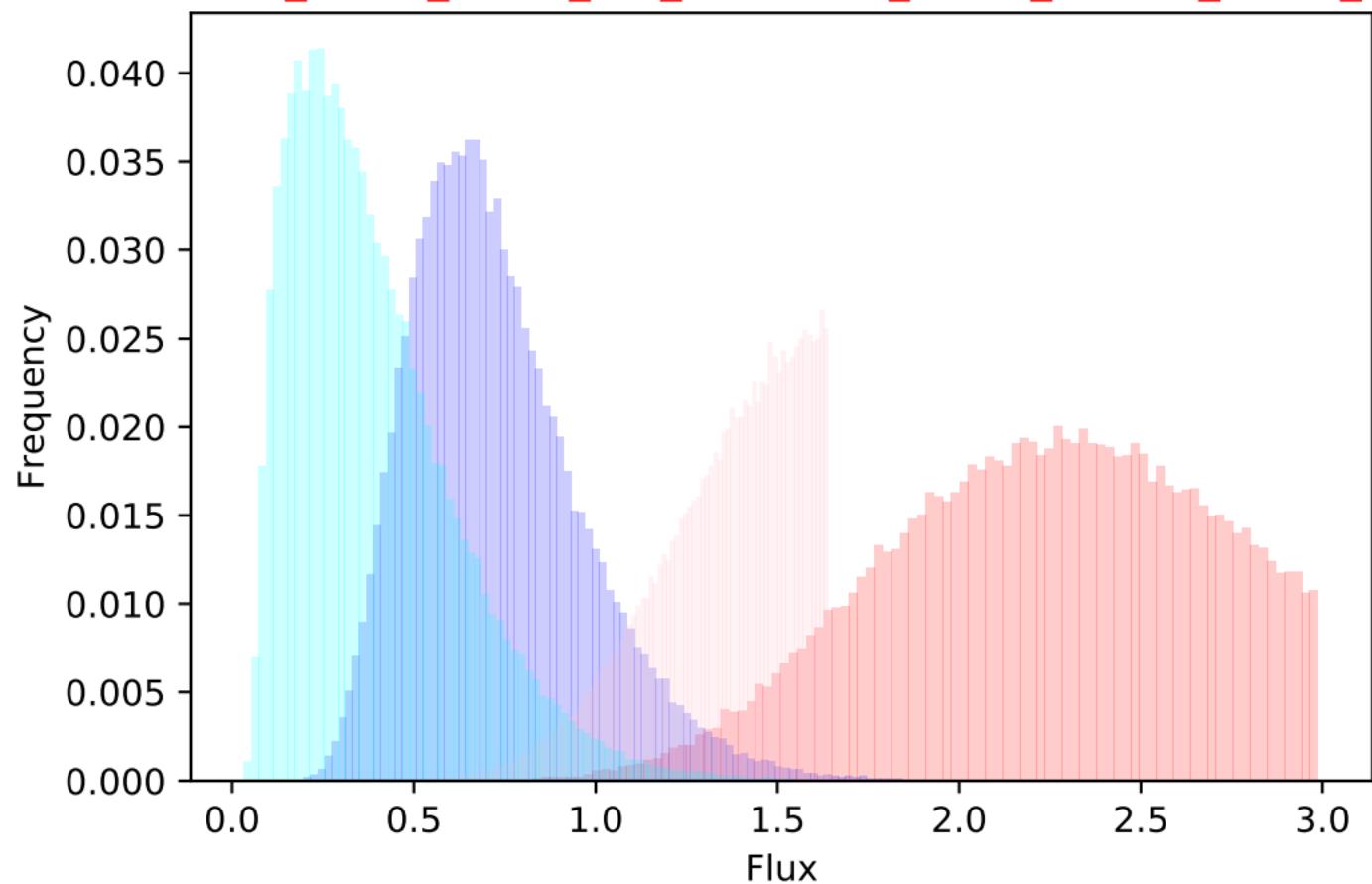
234 : Asp\_DASH\_SeA\_h + H\_h + NADPH\_h --> H\_DASH\_Ser\_h + NADP\_



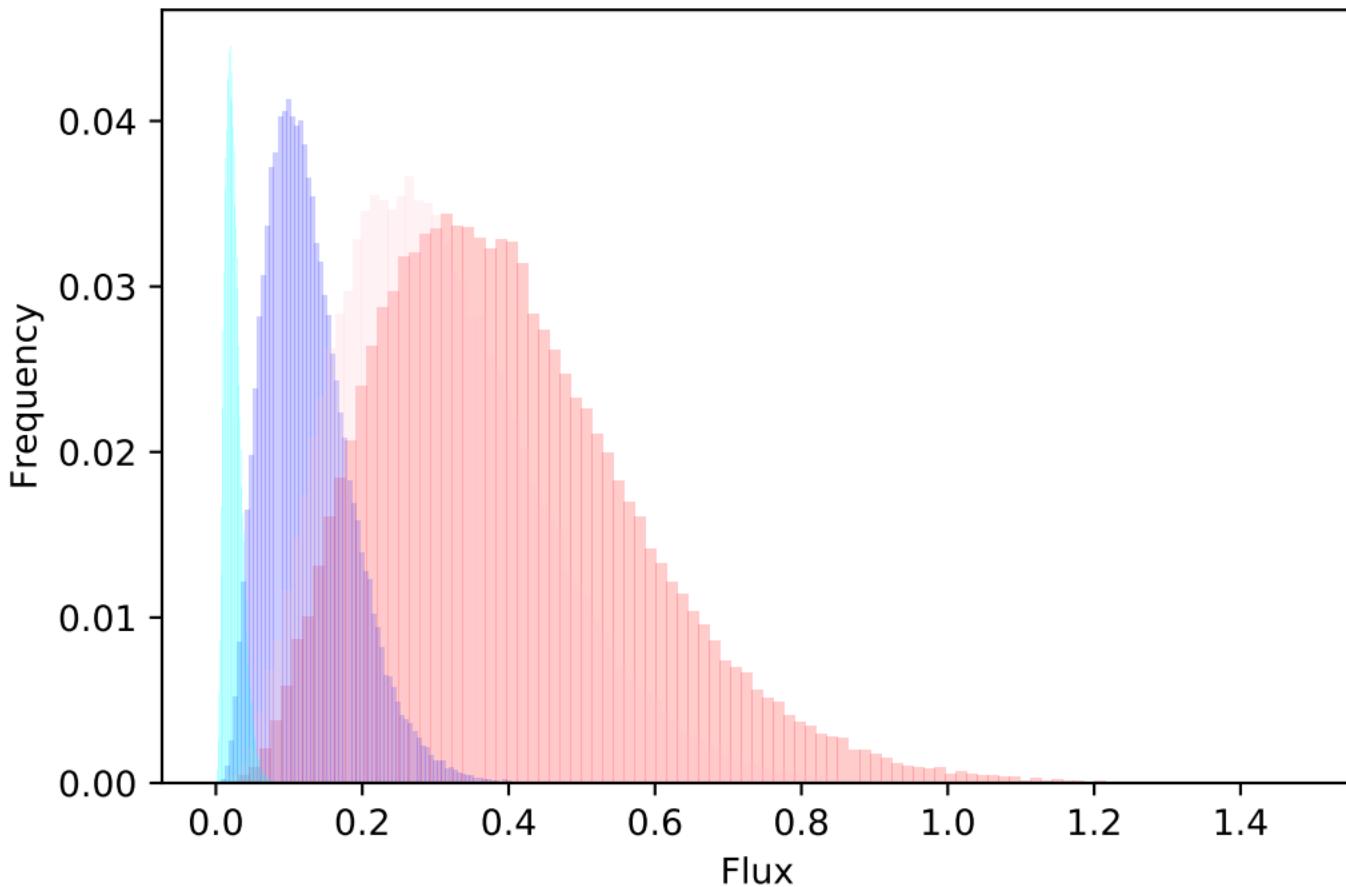
235 : Asp\_DASH\_SeA\_h + H\_h + NADH\_h --> H\_DASH\_Ser\_h + NAD\_h

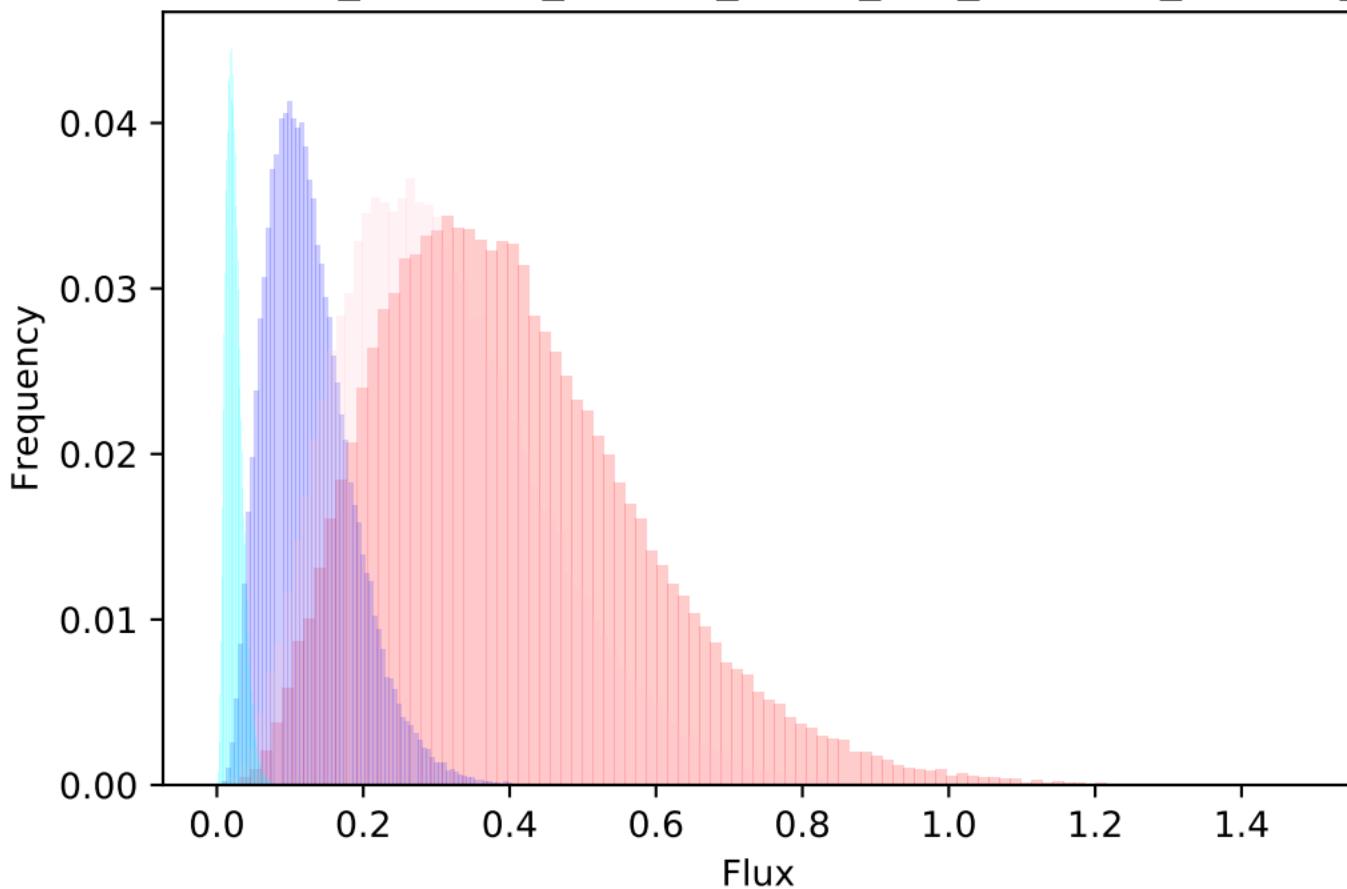


236 : ATP\_h + H\_DASH\_Ser\_h --> ADP\_h + H\_h + PH\_DASH\_Ser\_h

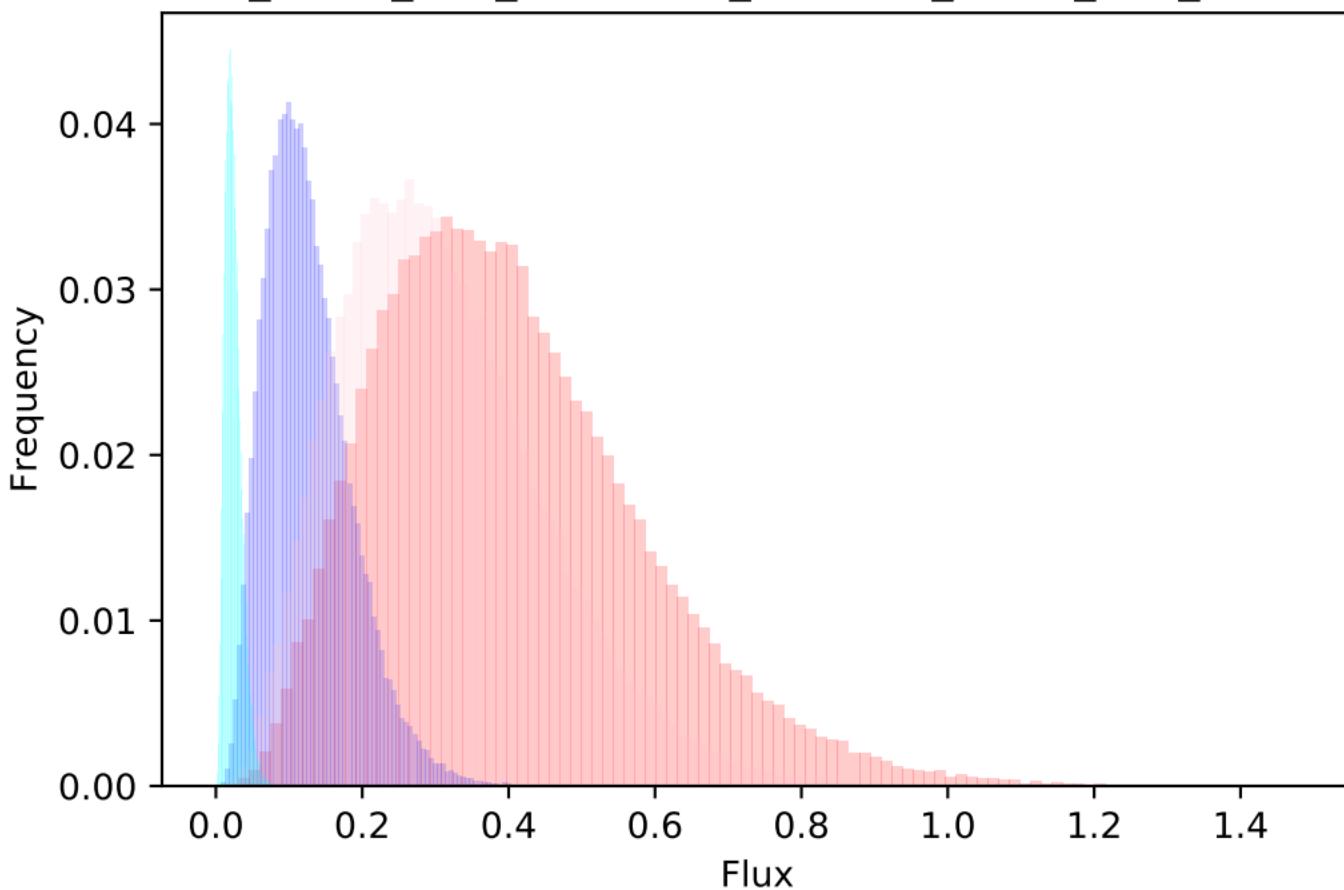


237 : Cys\_h + PH\_DASH\_Ser\_h --> CTH\_h + Pi\_h

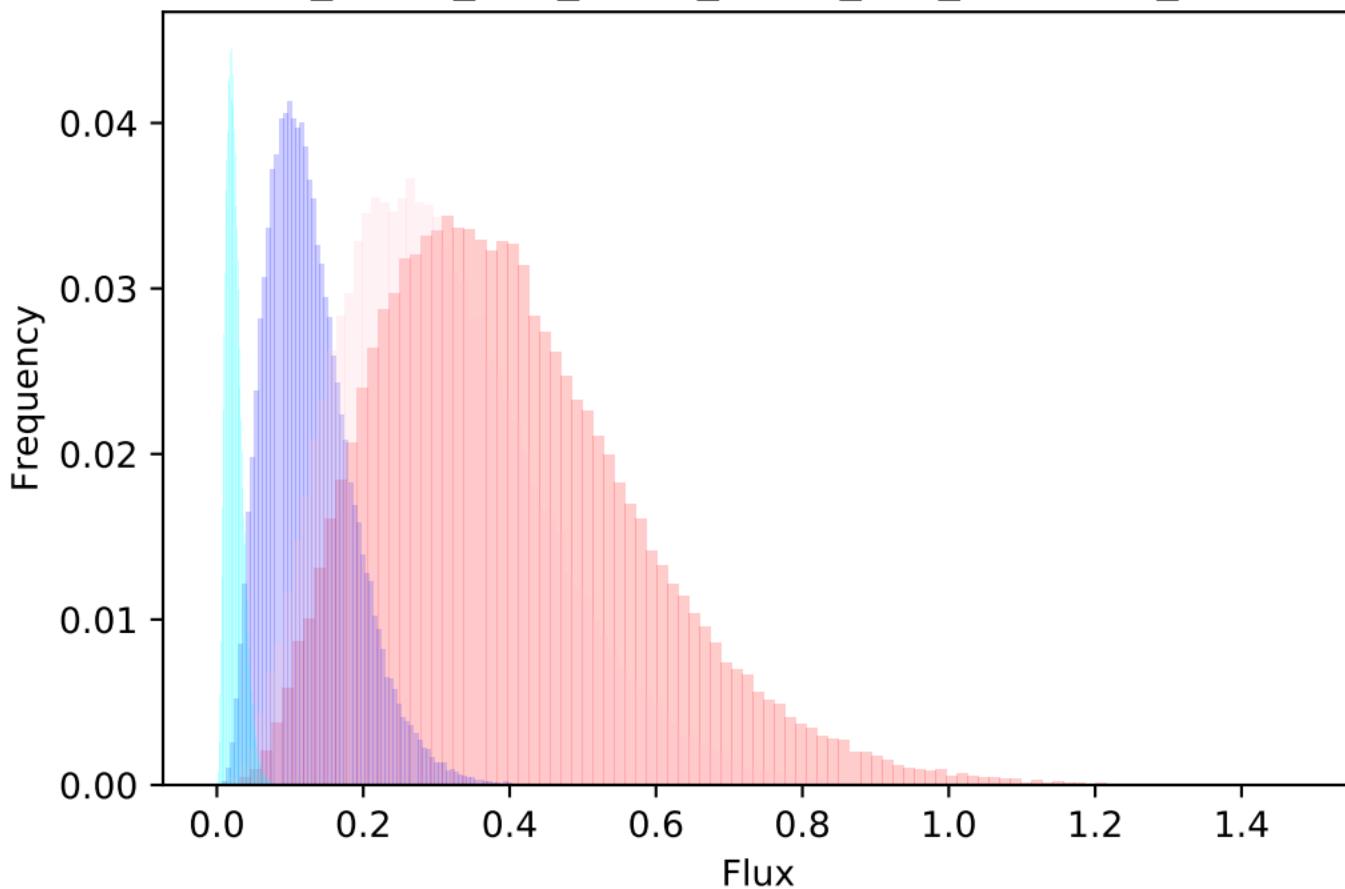




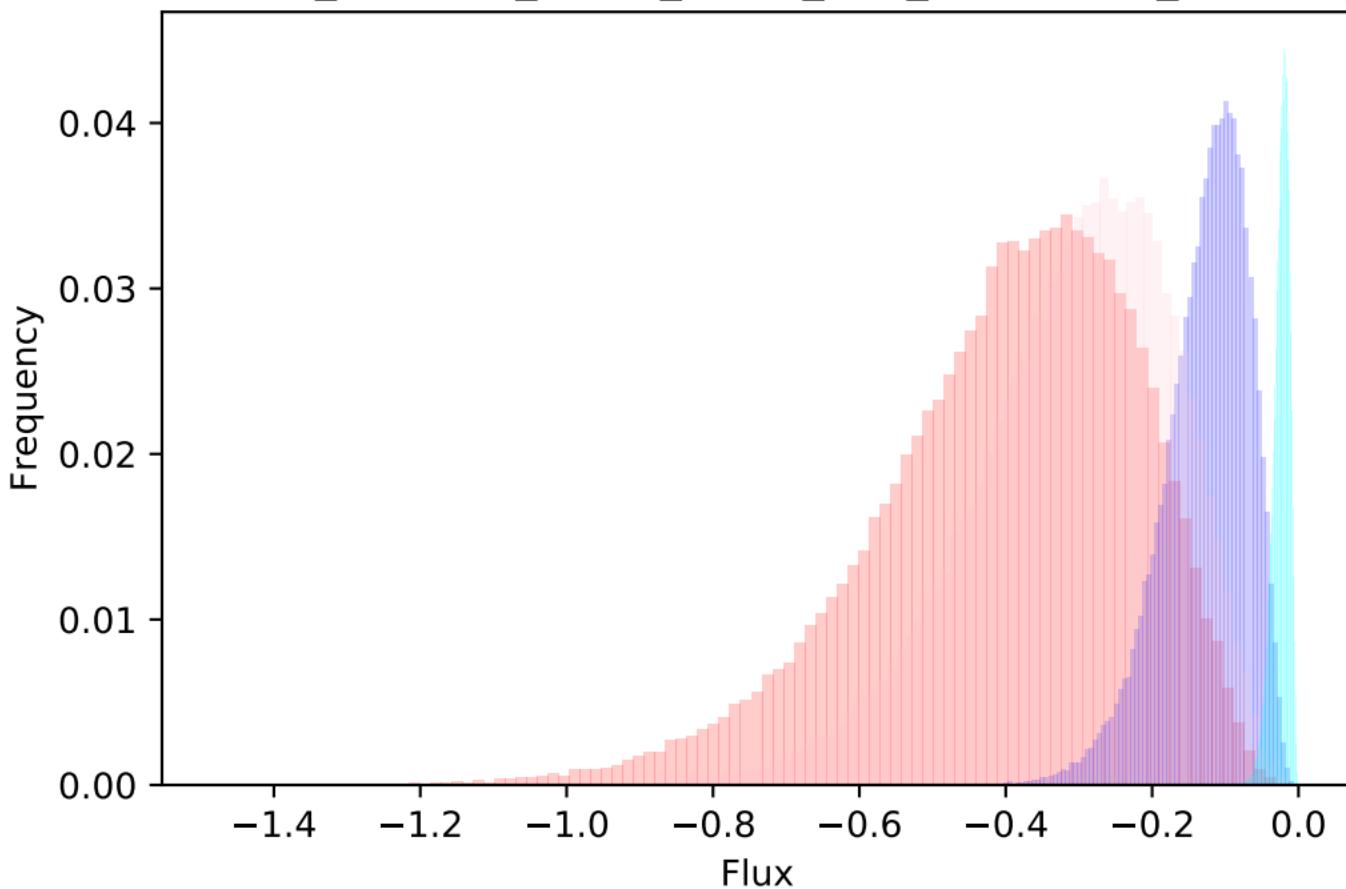
239 : M\_DASH\_THF\_c + NADH\_c --> 5M\_DASH\_THF\_c + NAD\_c

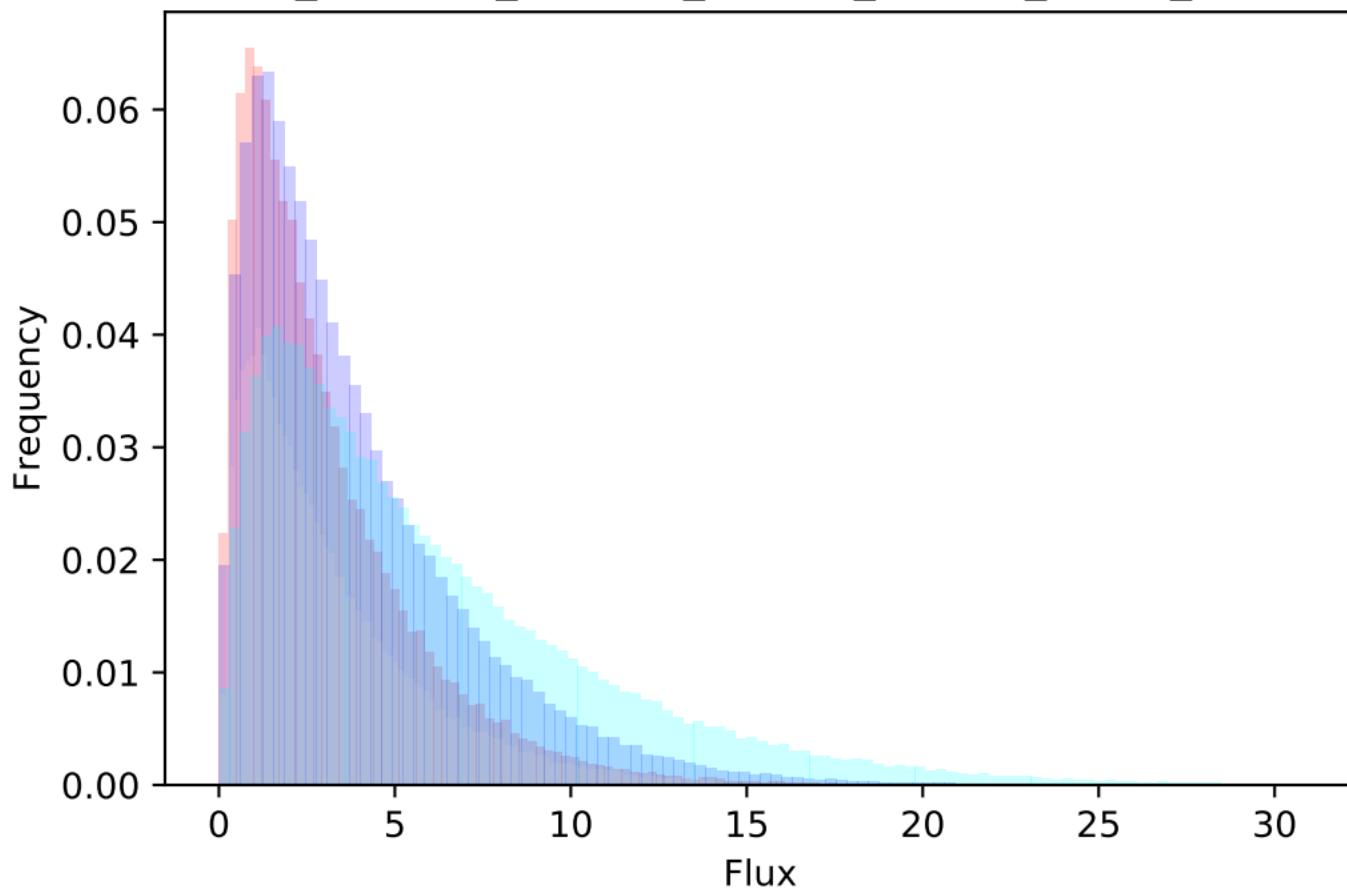
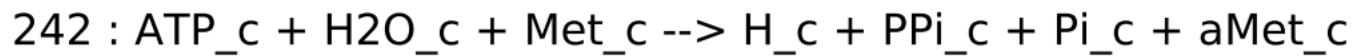


240 : 5M\_DASH\_ THF\_c + H\_DASH\_Cys\_c --> Met\_c + THF\_c

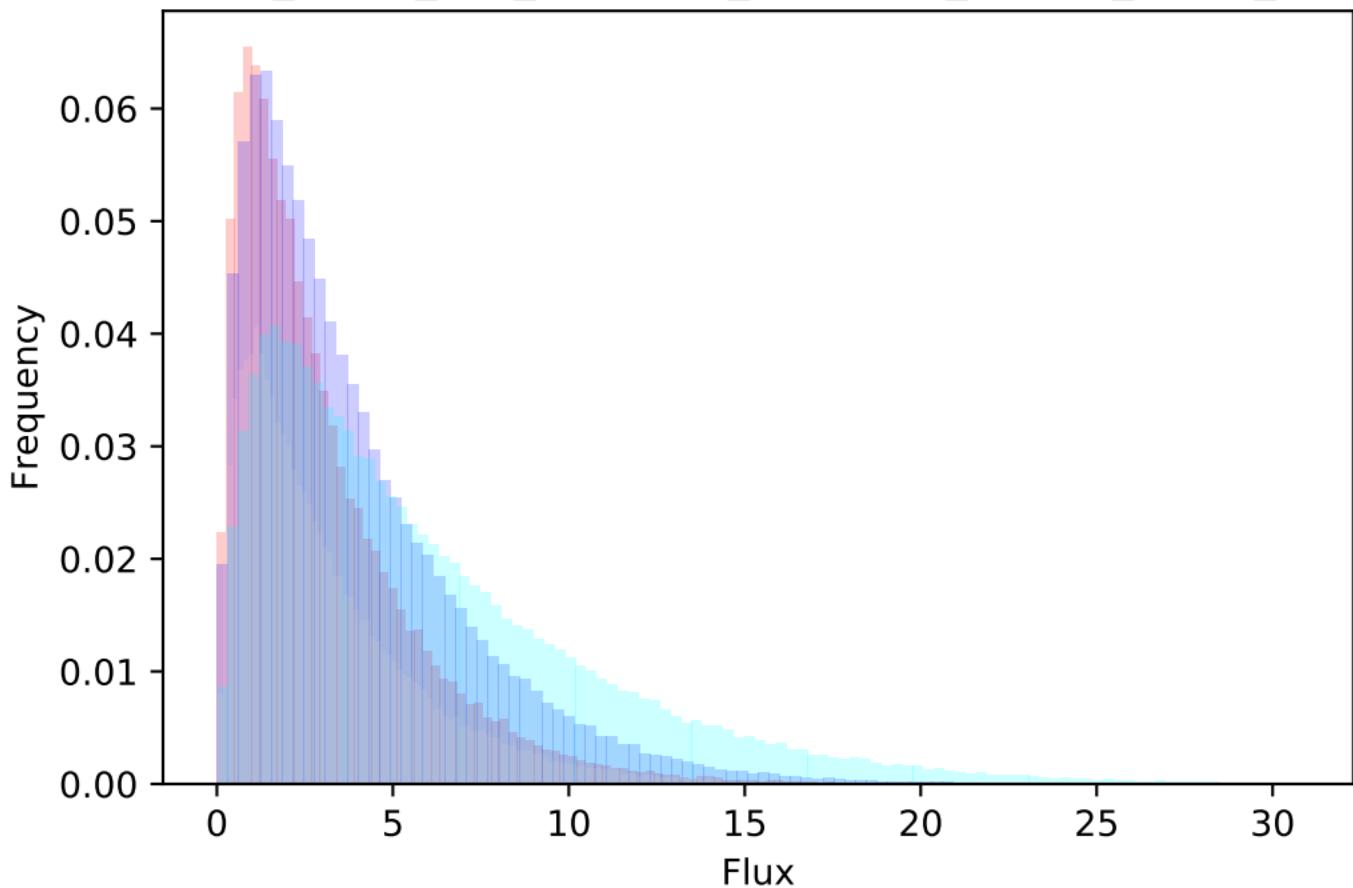


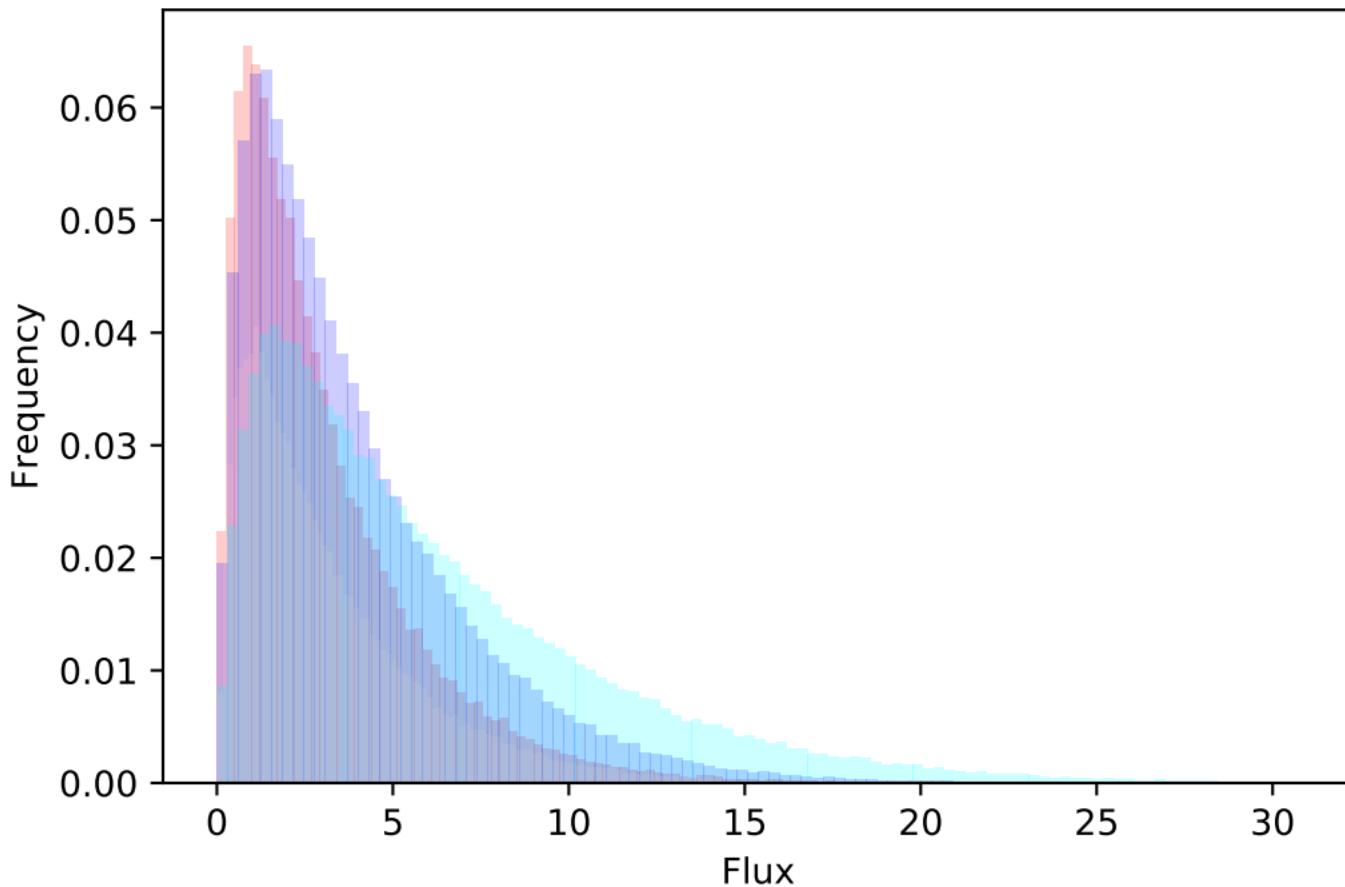
241 : Gly\_c + H2O\_c + M\_DASH\_ THF\_c <=> Ser\_c + THF\_c



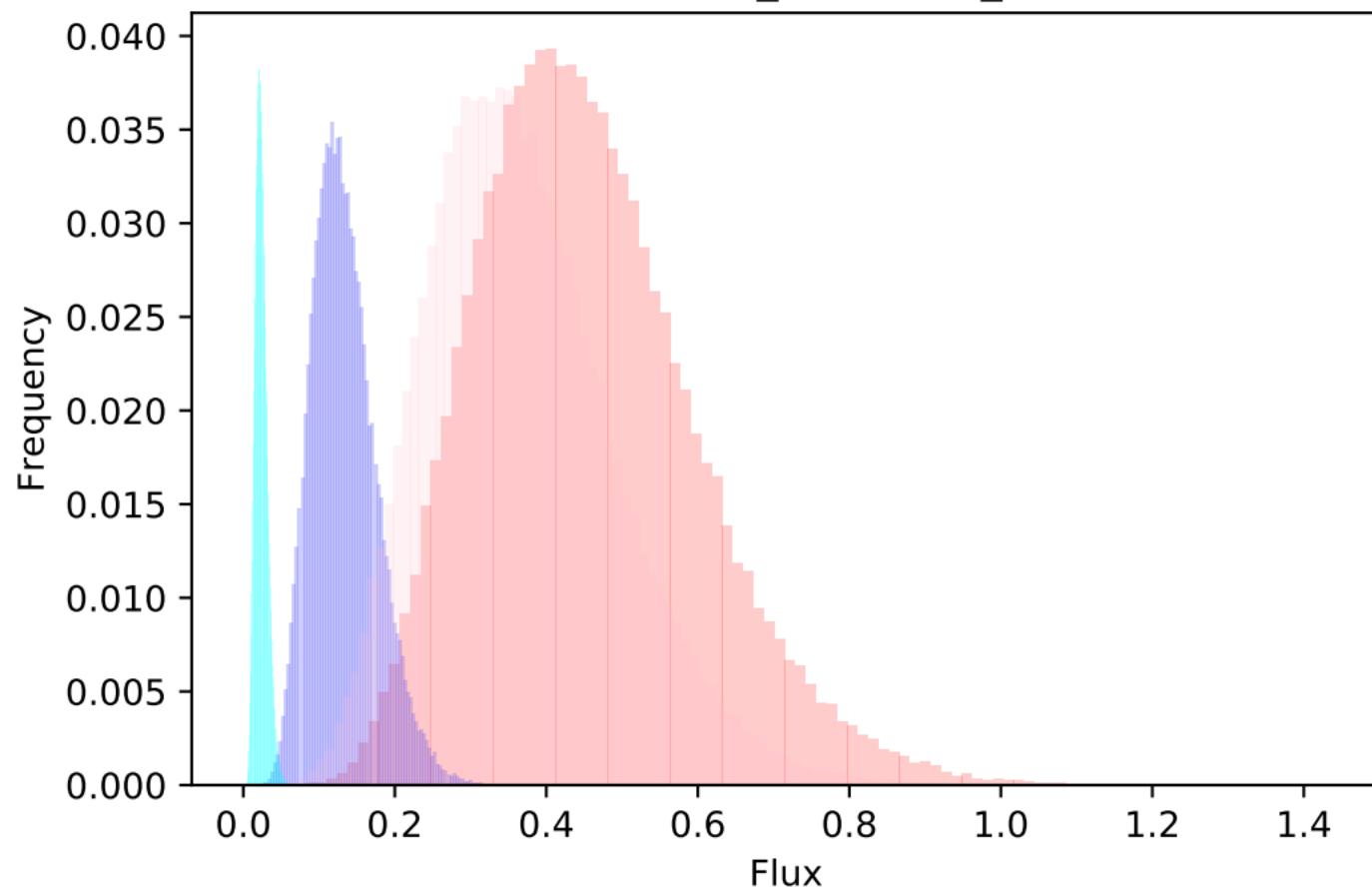


243 : H\_DASH\_Cys\_c + aMet\_c --> Met\_c + aH\_DASH\_Cys\_c

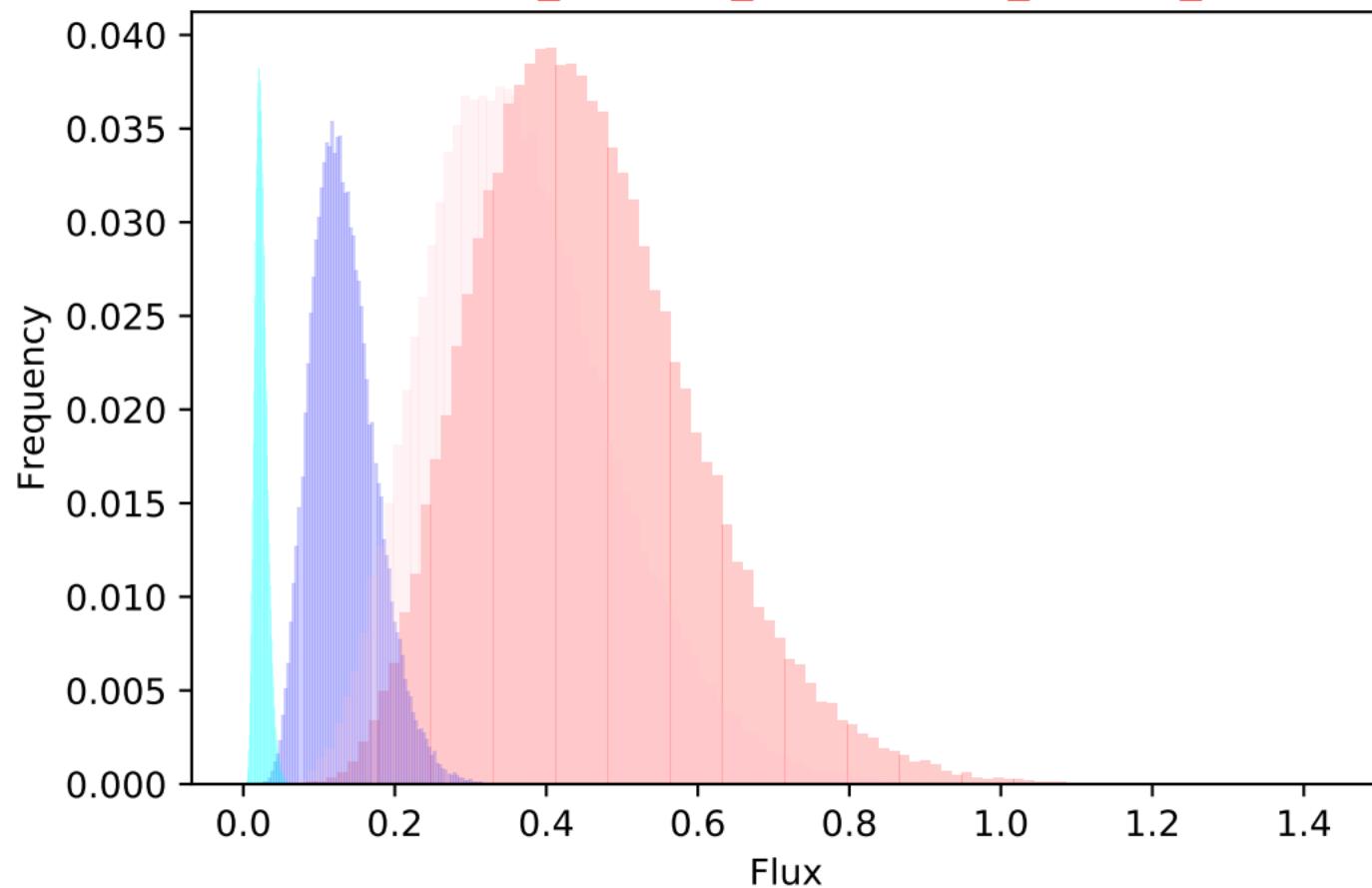




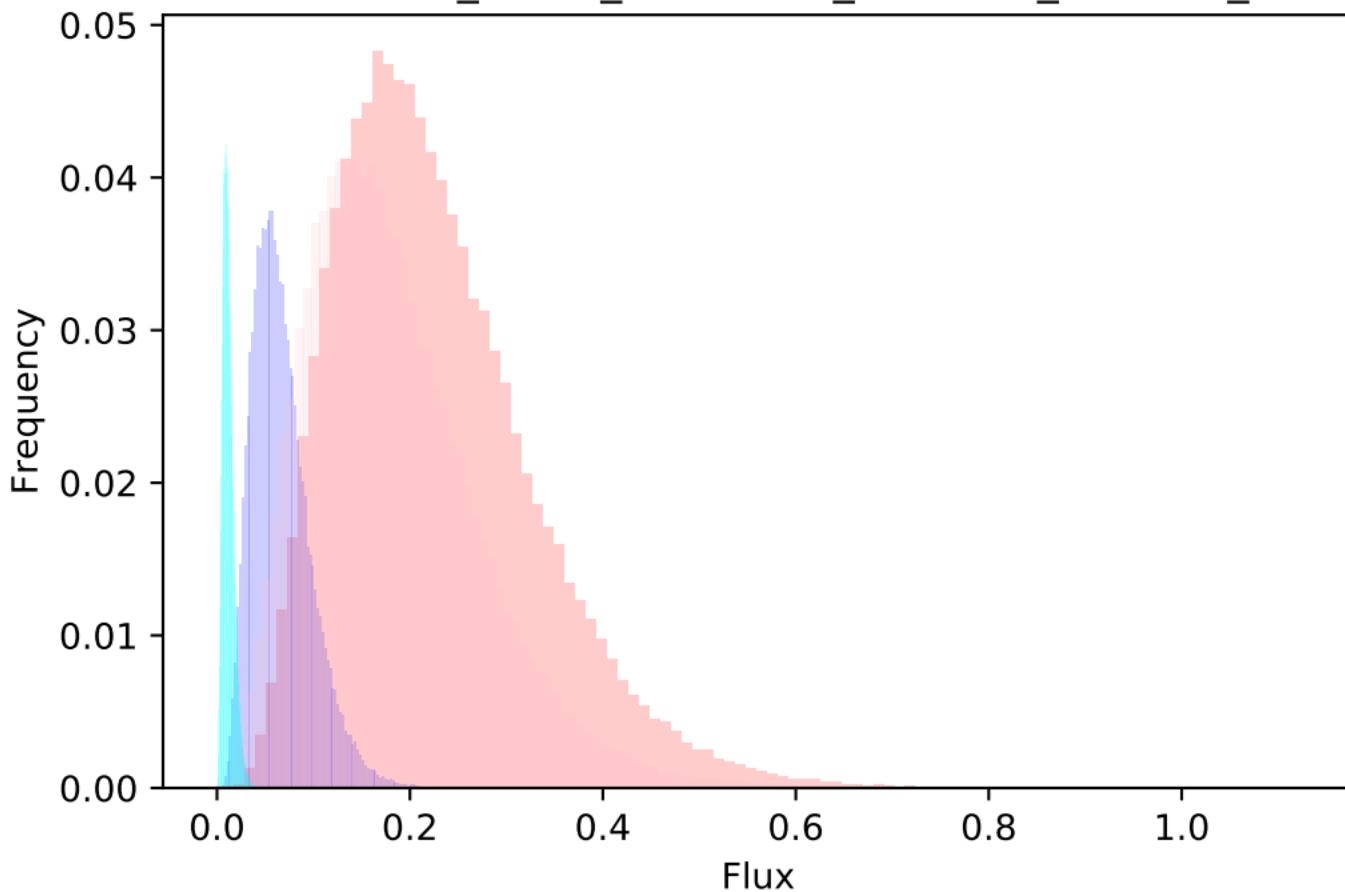
245 : CHR\_h --> PRE\_h

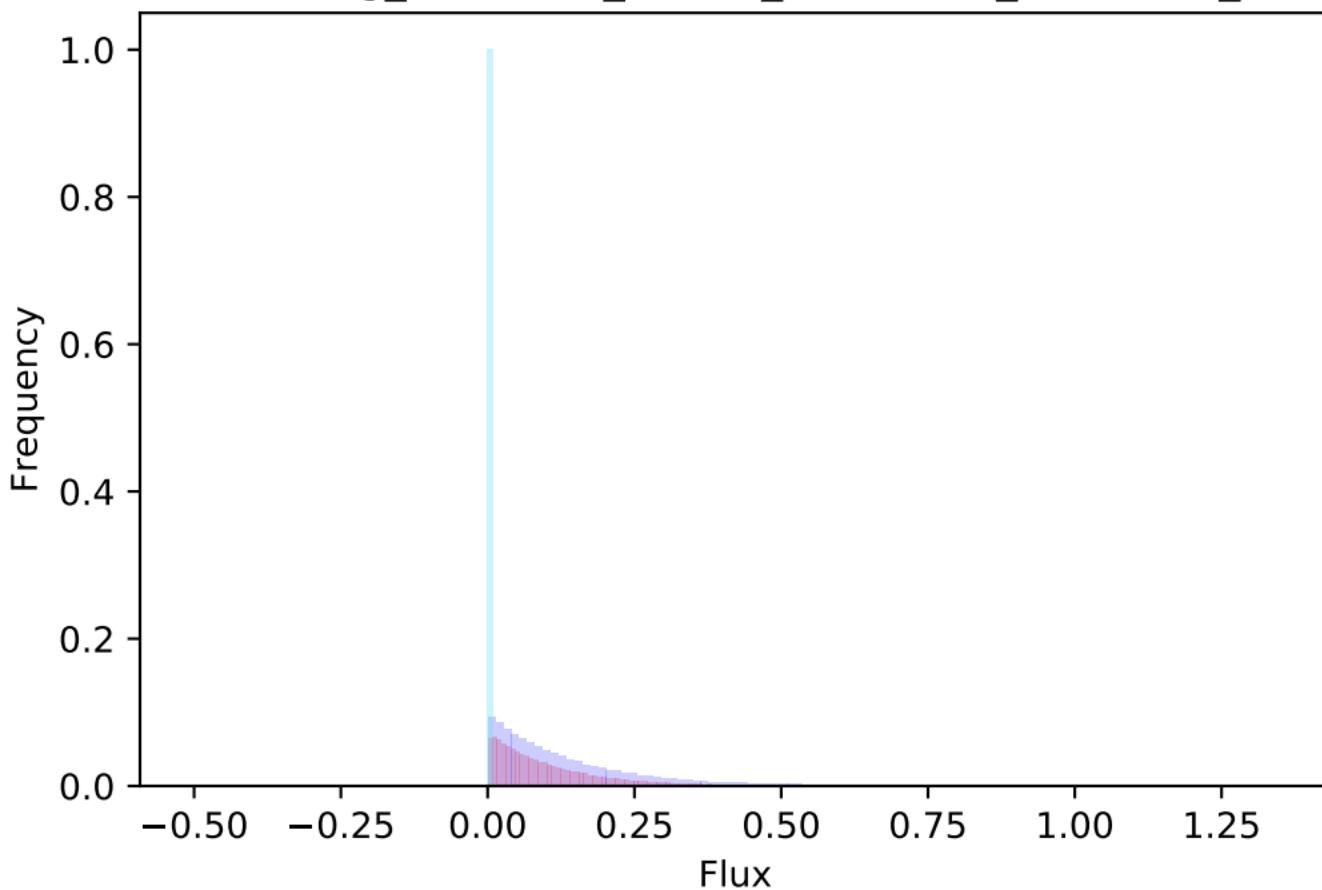
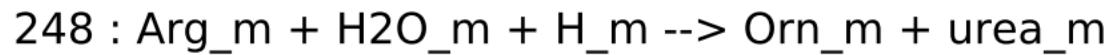


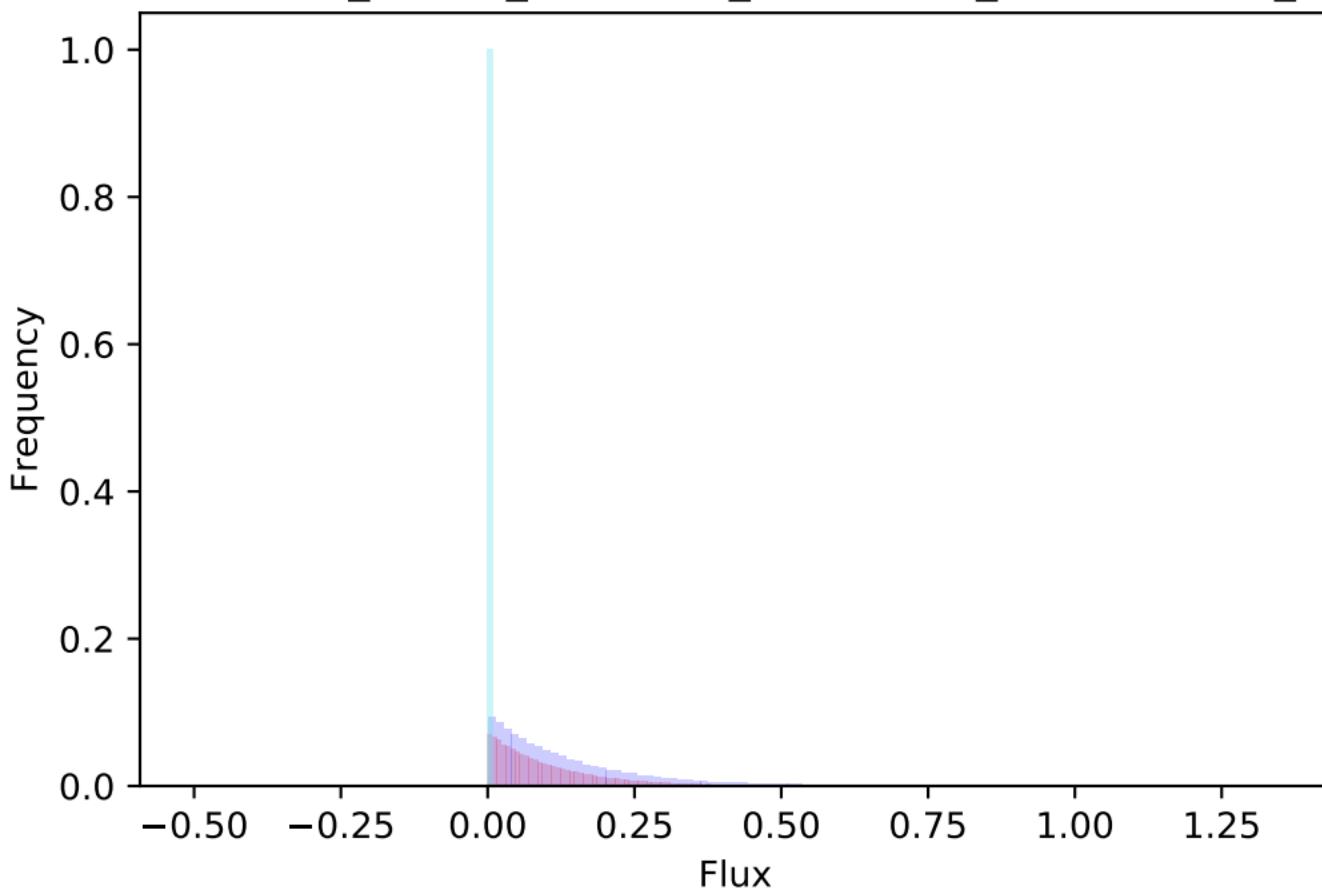
246 : Glu\_h + PRE\_h <=> AGN\_h + KG\_h



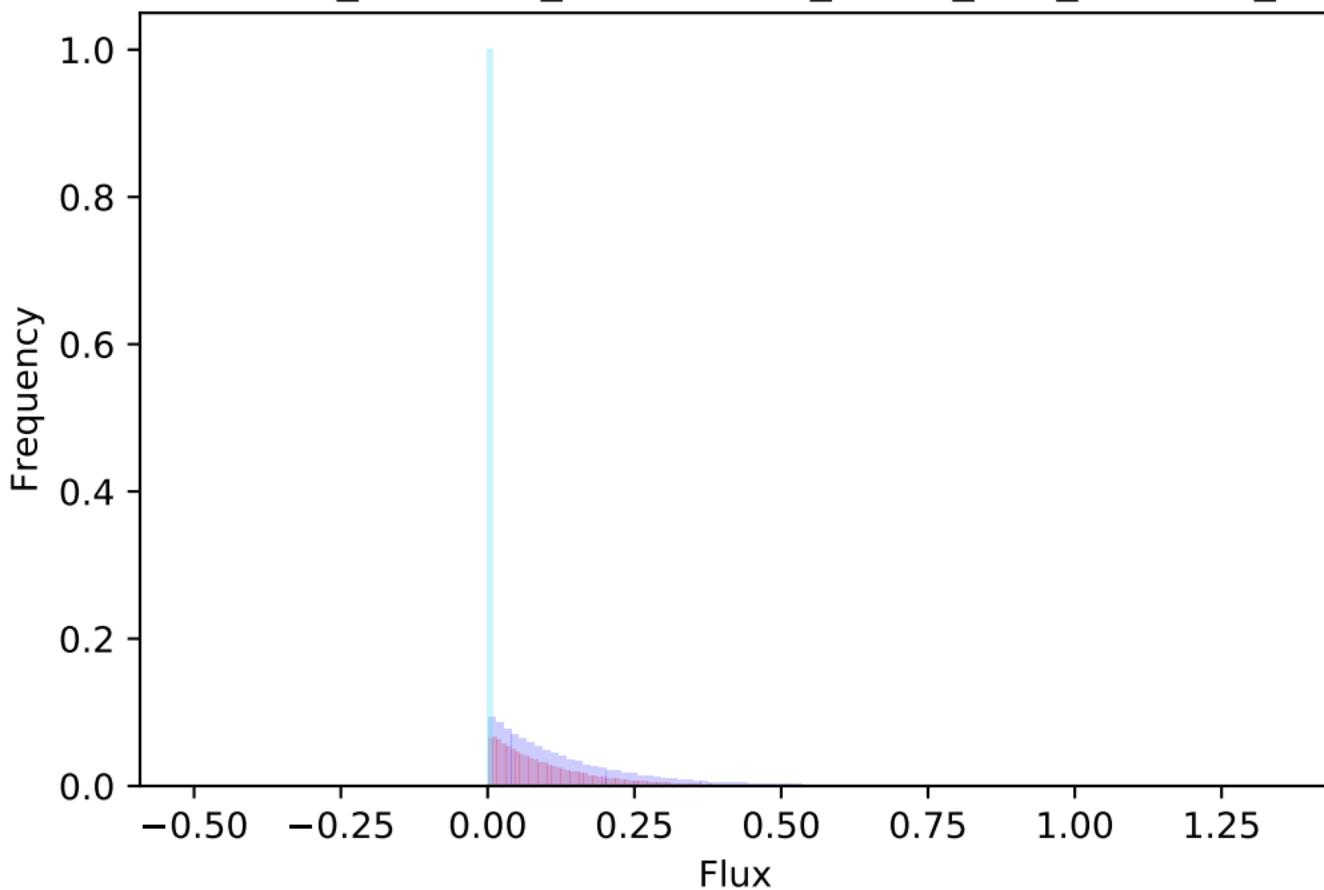
247 : AGN\_h + H\_h --> CO2\_h + H2O\_h + Phe\_h



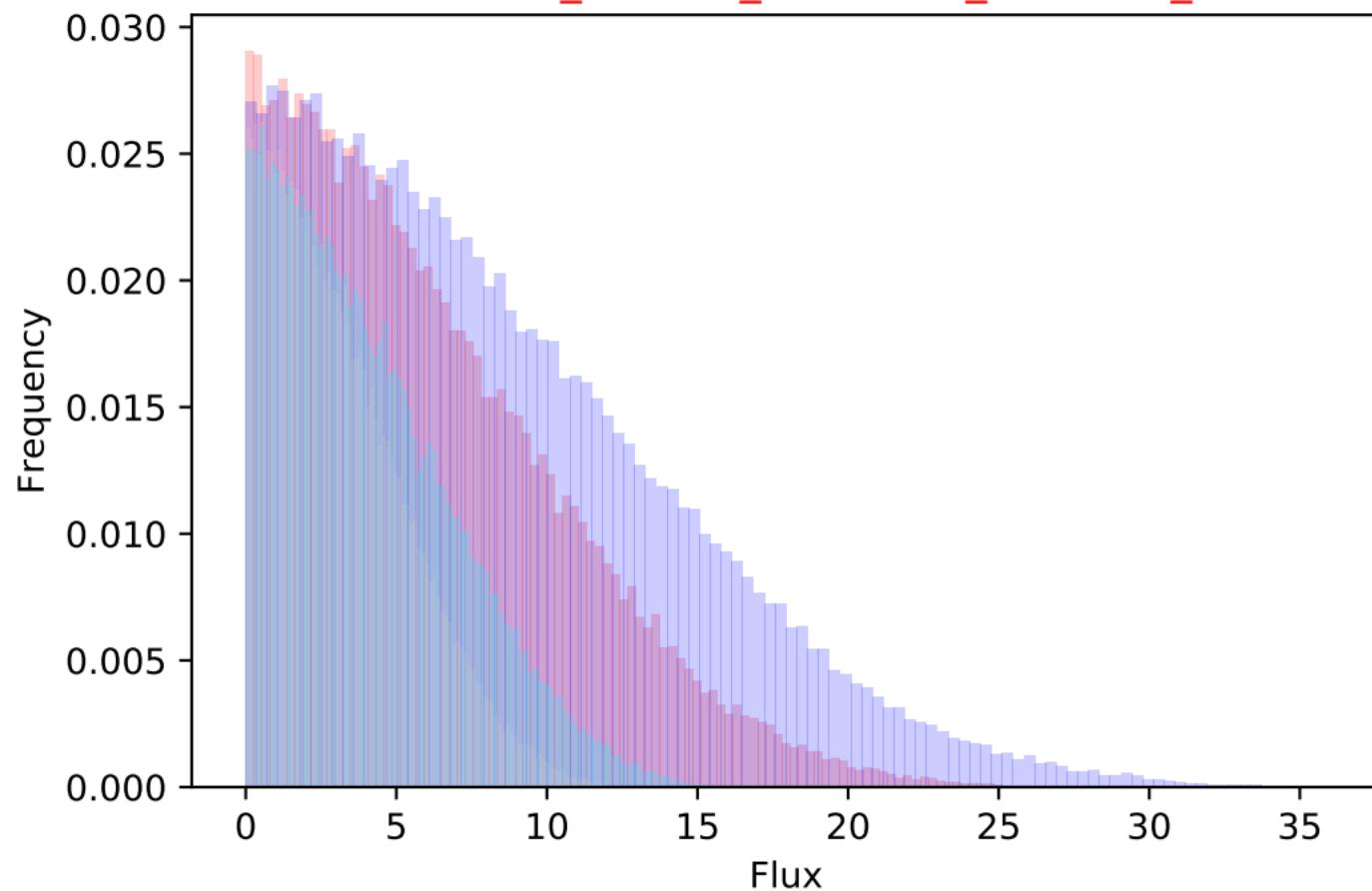




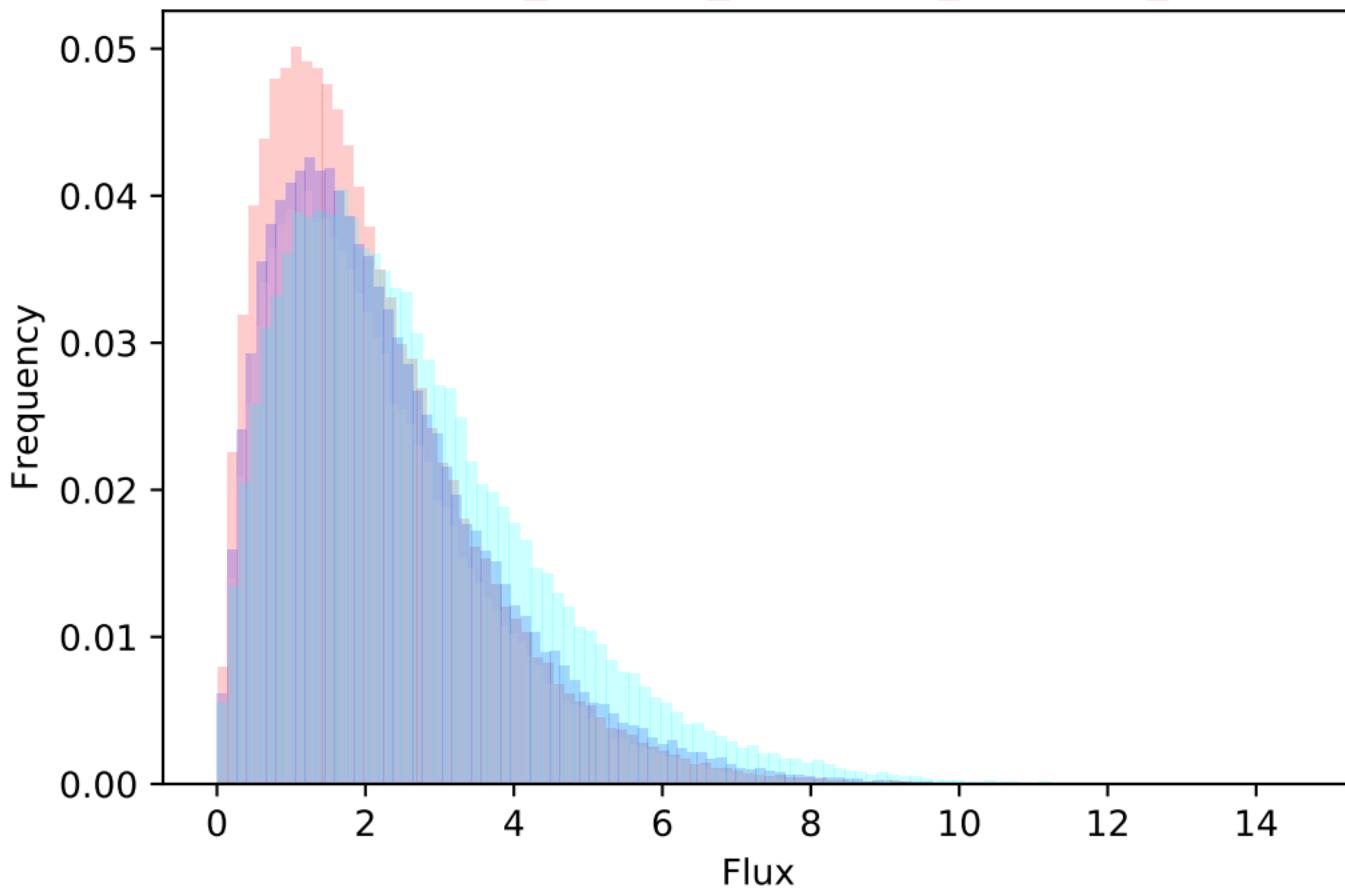
250 : KG\_m + Orn\_m <=> Glu\_DASH\_SeA\_m + Glu\_m



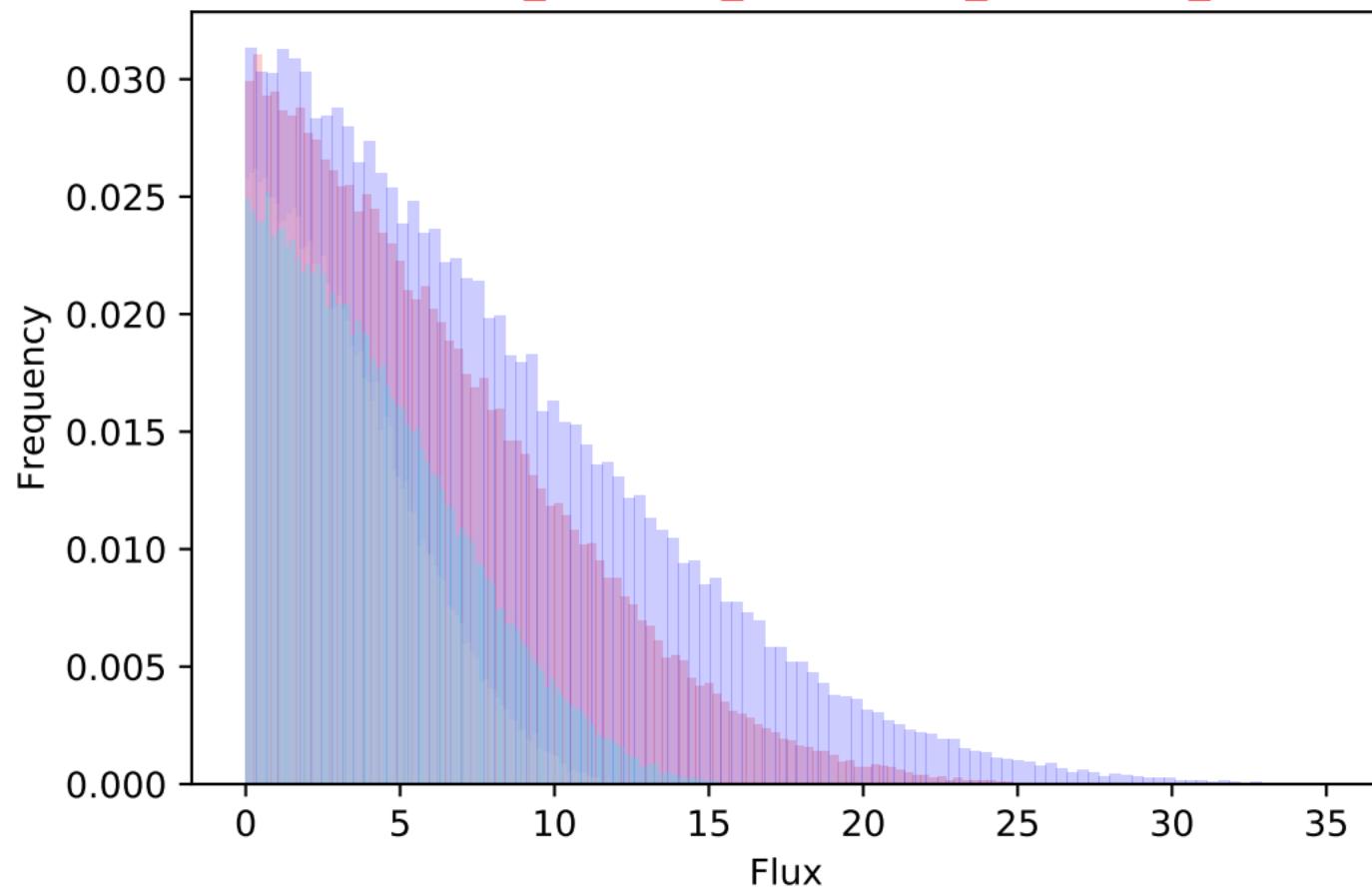
251 : ATP\_c + Glu\_c --> ADP\_c + GluP\_c



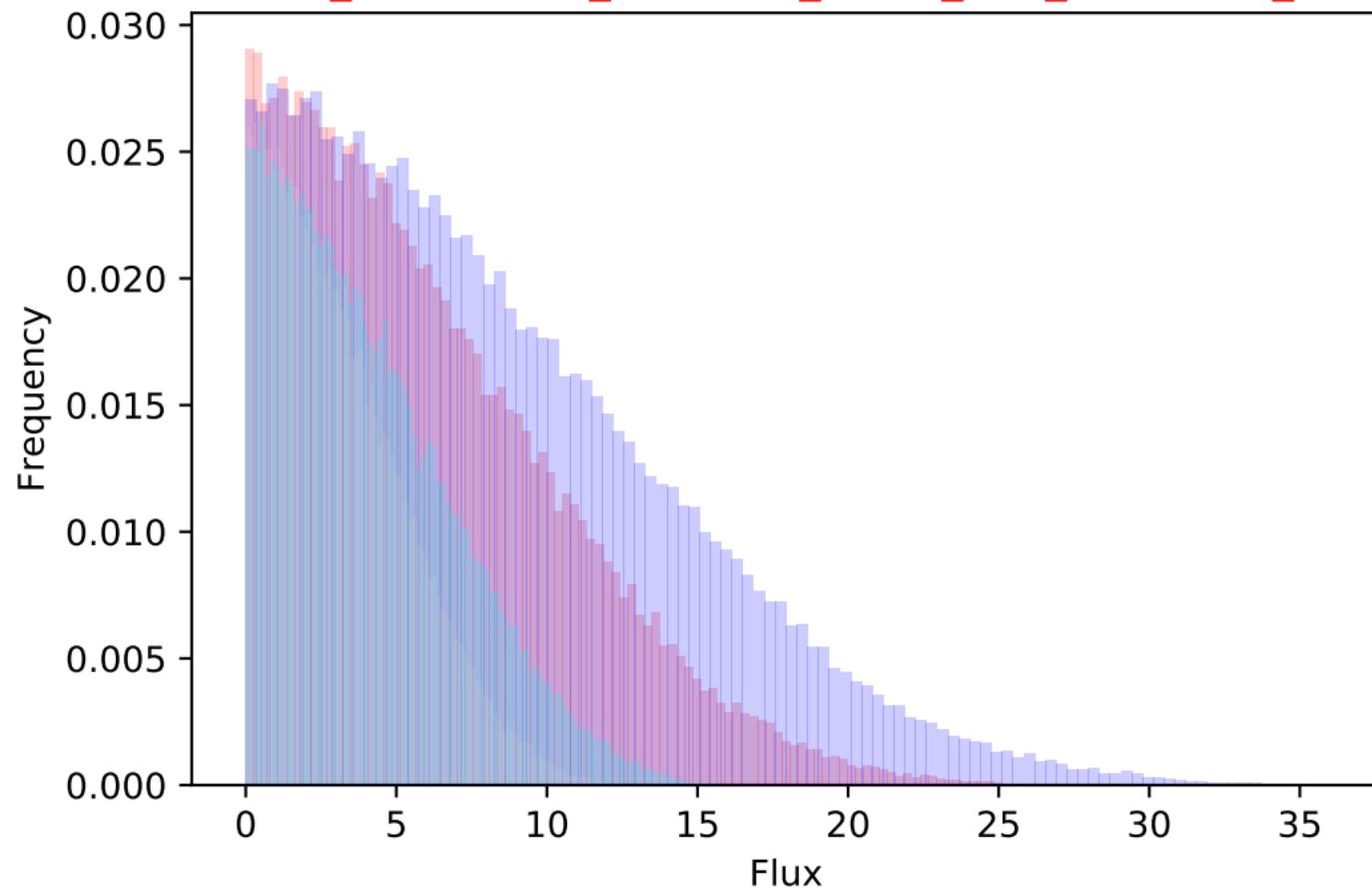
252 : ATP\_h + Glu\_h  $\rightarrow$  ADP\_h + GluP\_h



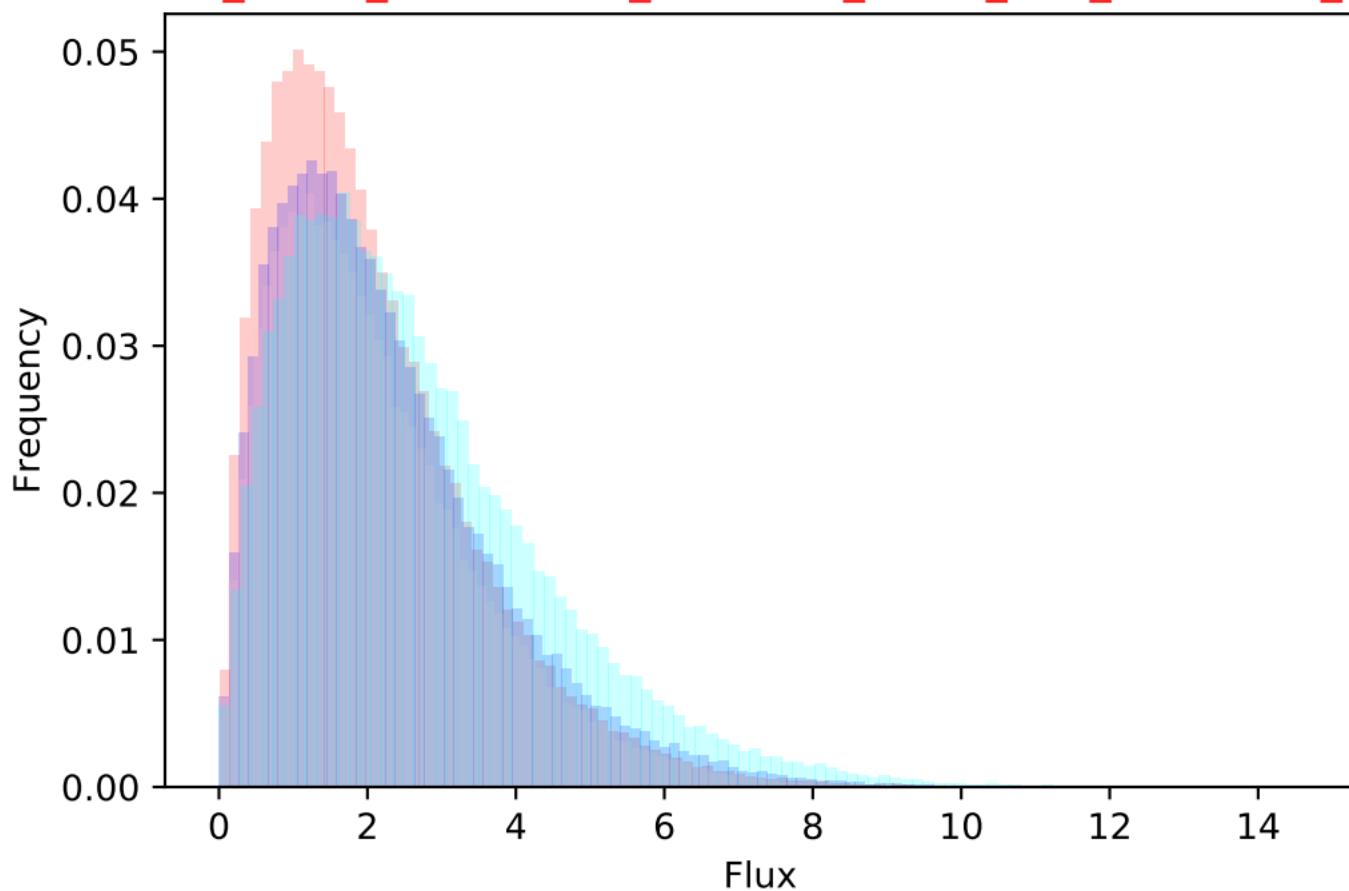
253 : ATP\_m + Glu\_m --> ADP\_m + GluP\_m

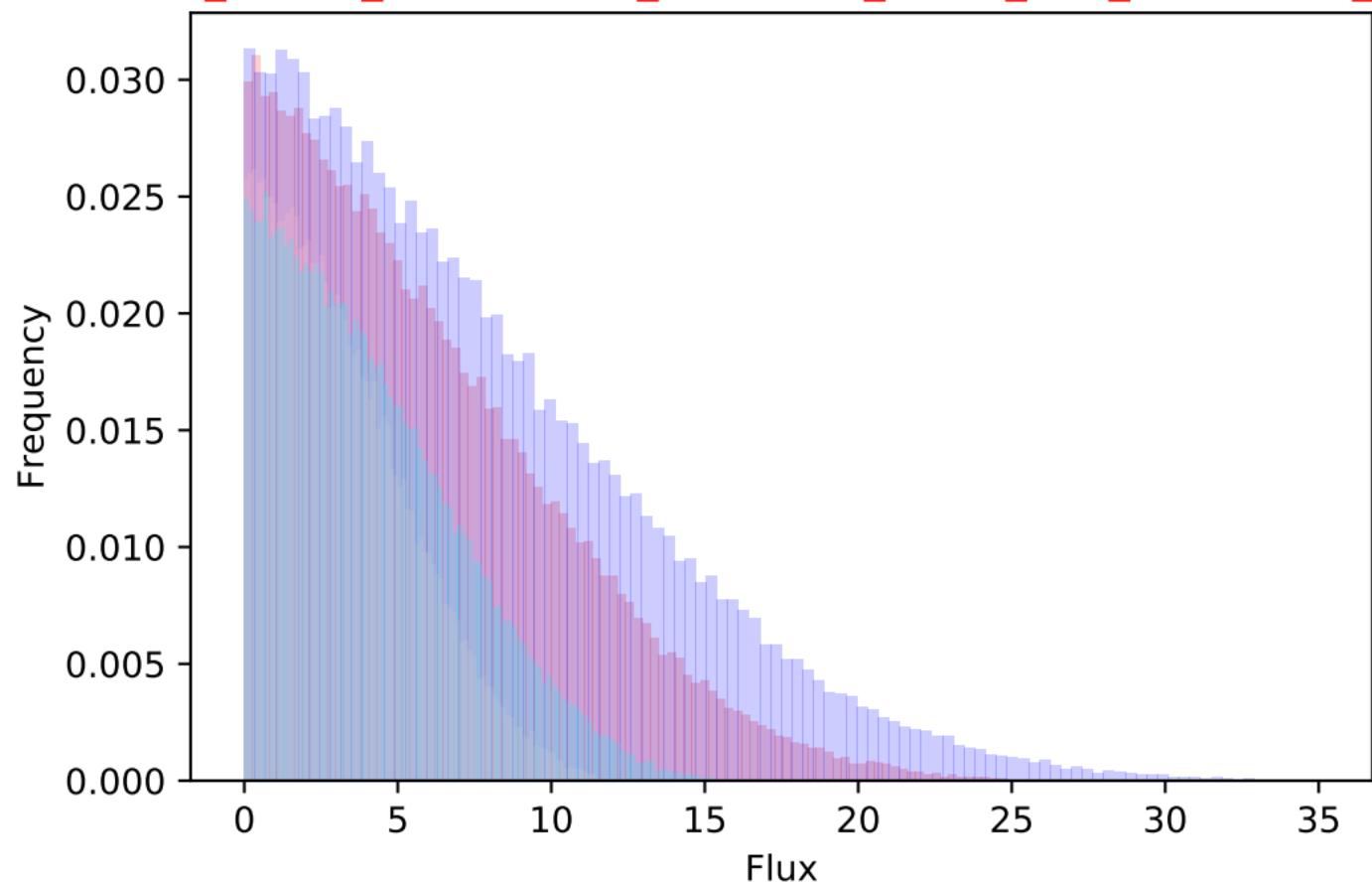


254 : GluP\_c + NADPH\_c  $\rightarrow$  Glu\_DASH\_SeA\_c + NADP\_c + Pi\_c

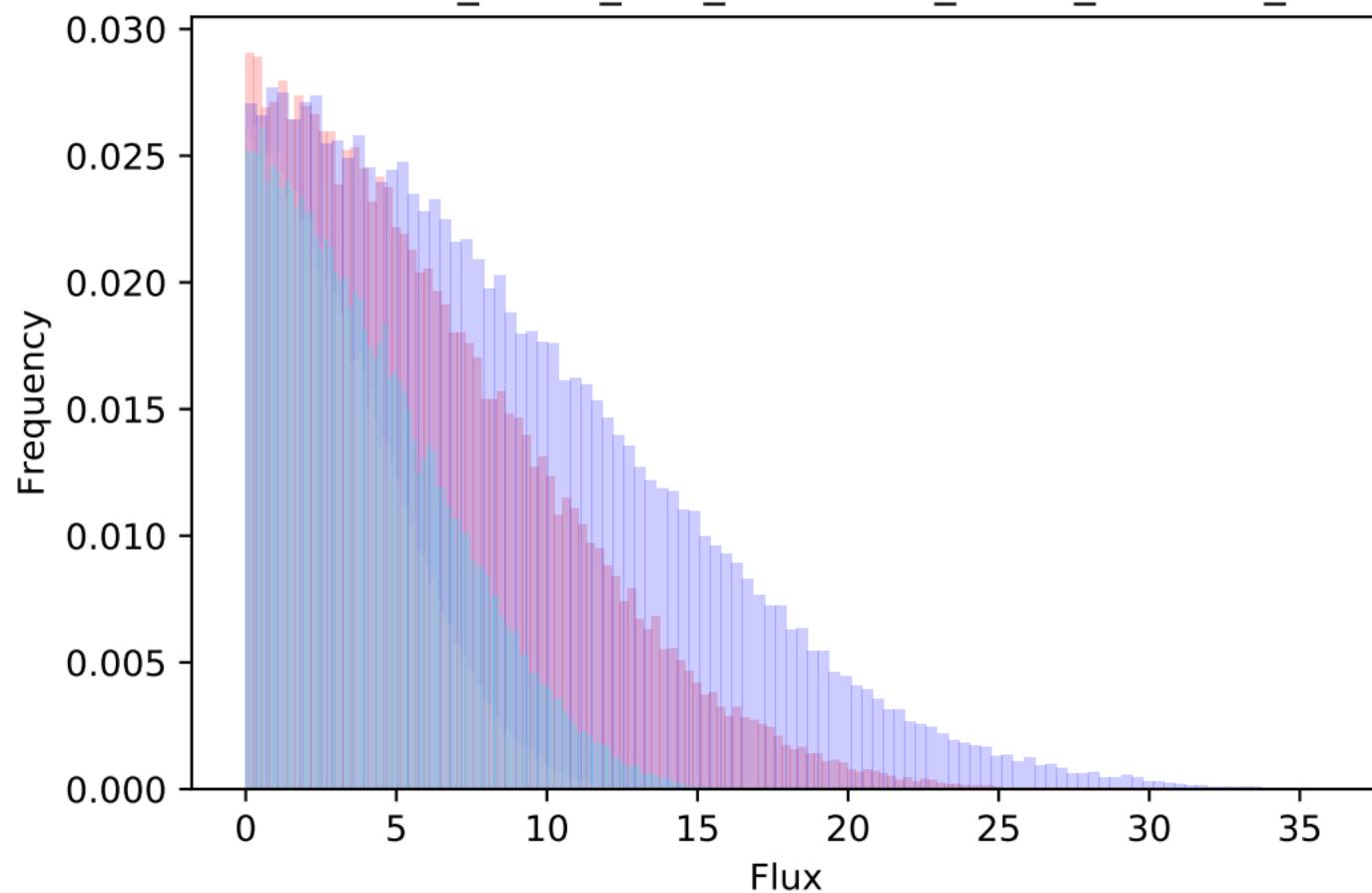


255 : GluP\_h + H\_h + NADPH\_h --> Glu\_DASH\_SeA\_h + NADP\_h + Pi\_h

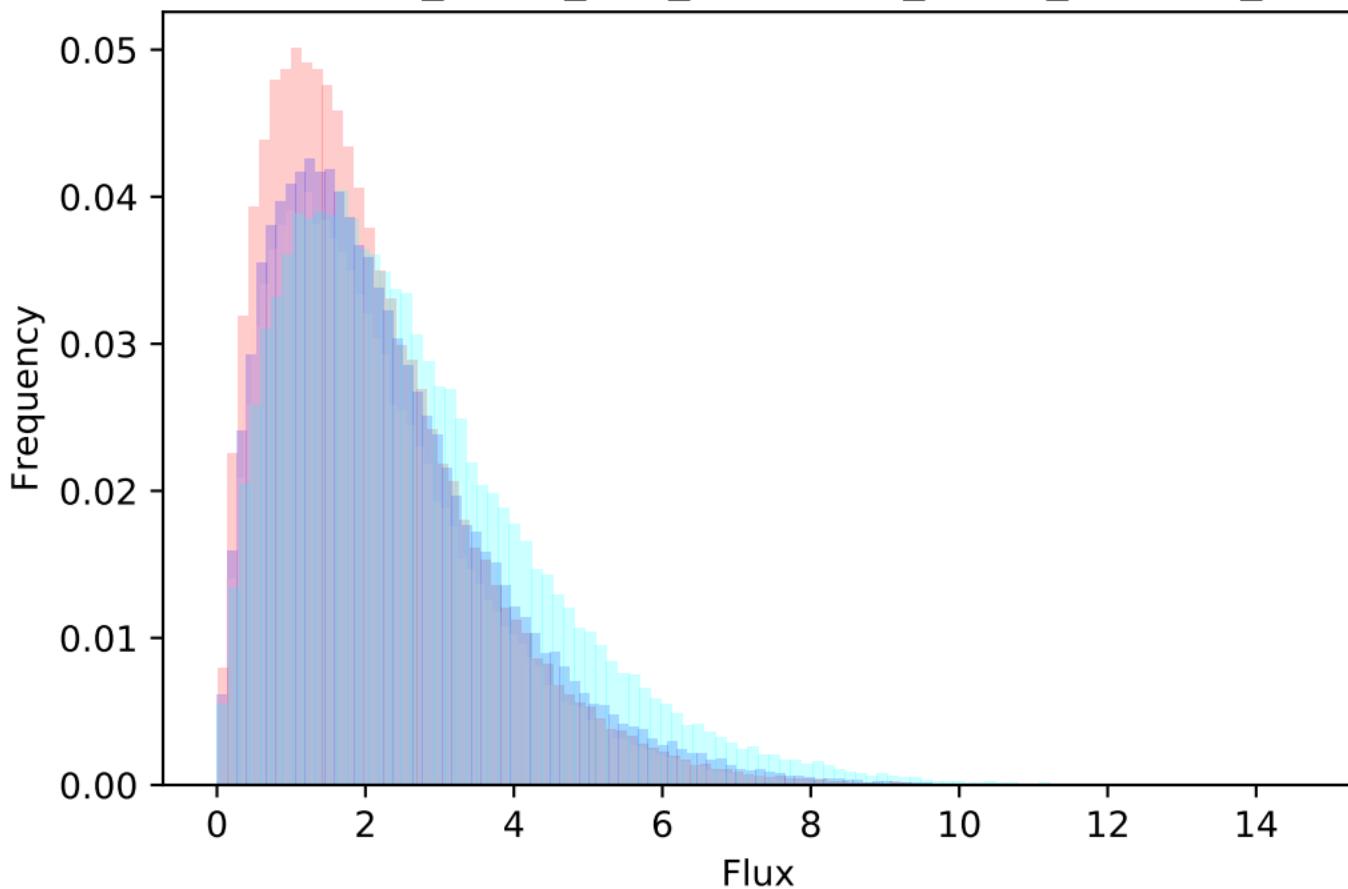




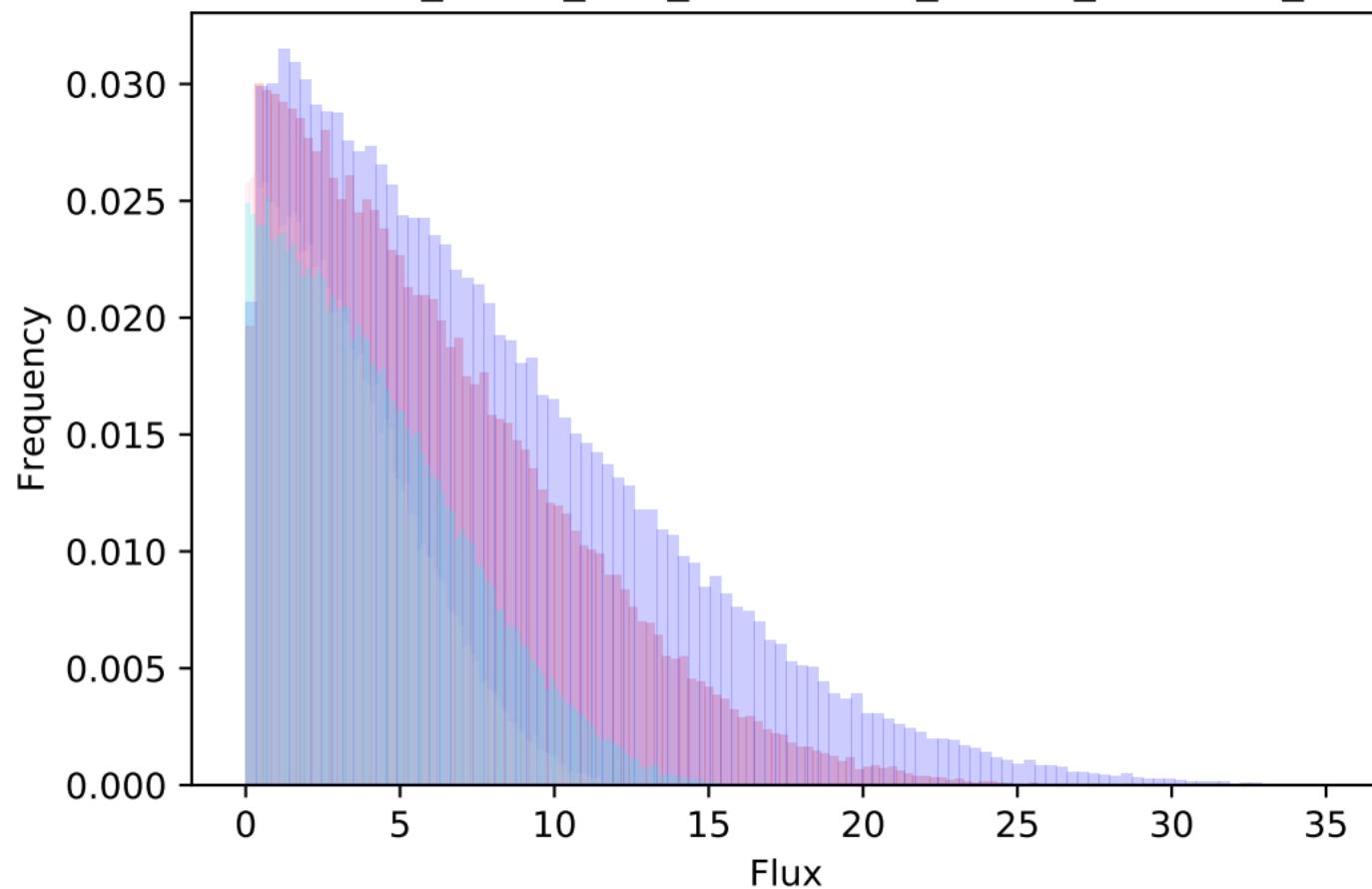
257 : Glu\_DASH\_SeA\_c --> H2O\_c + H\_c + P5C\_c

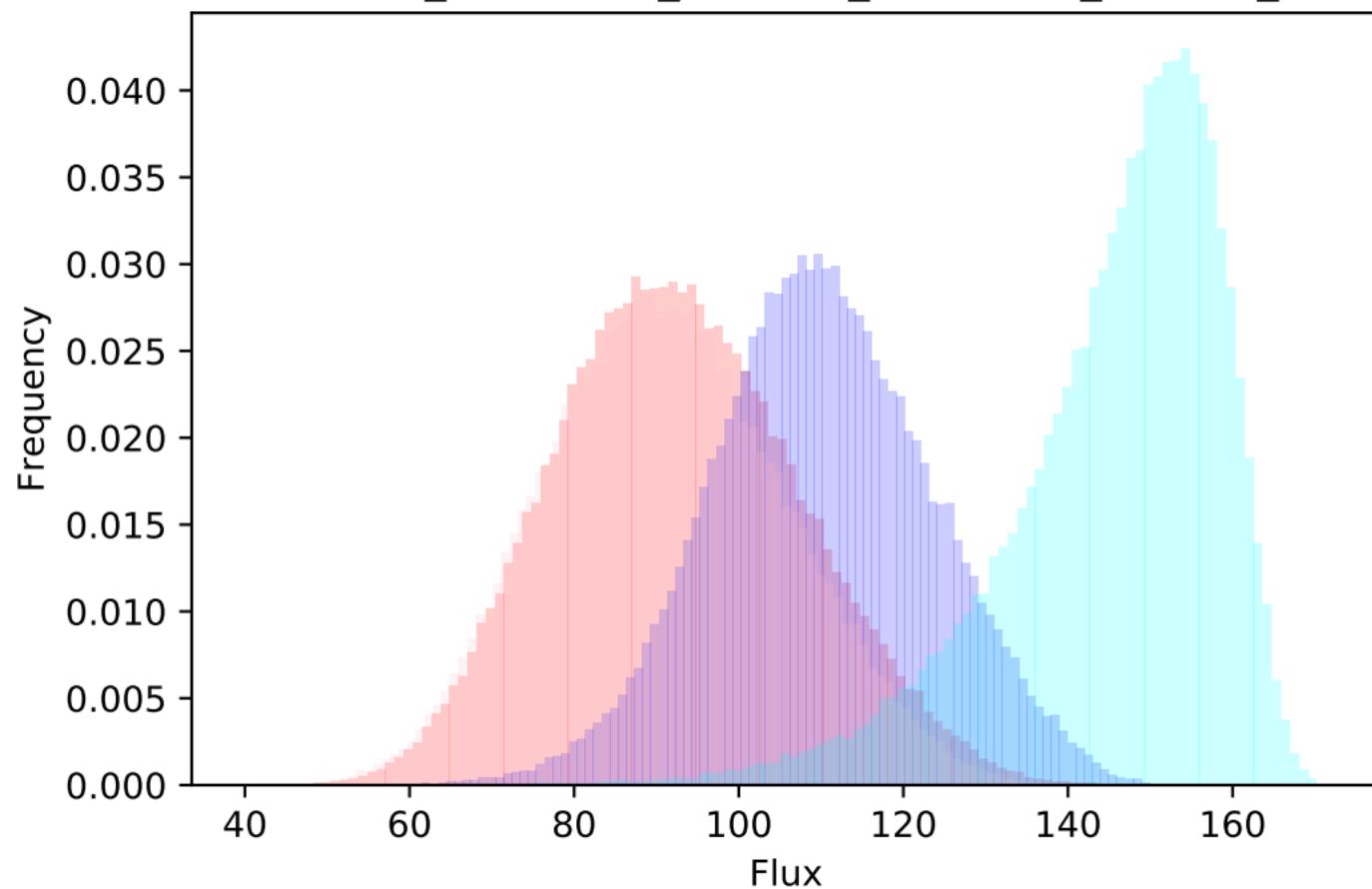


258 : Glu\_DASH\_SeA\_h --> H2O\_h + H\_h + P5C\_h

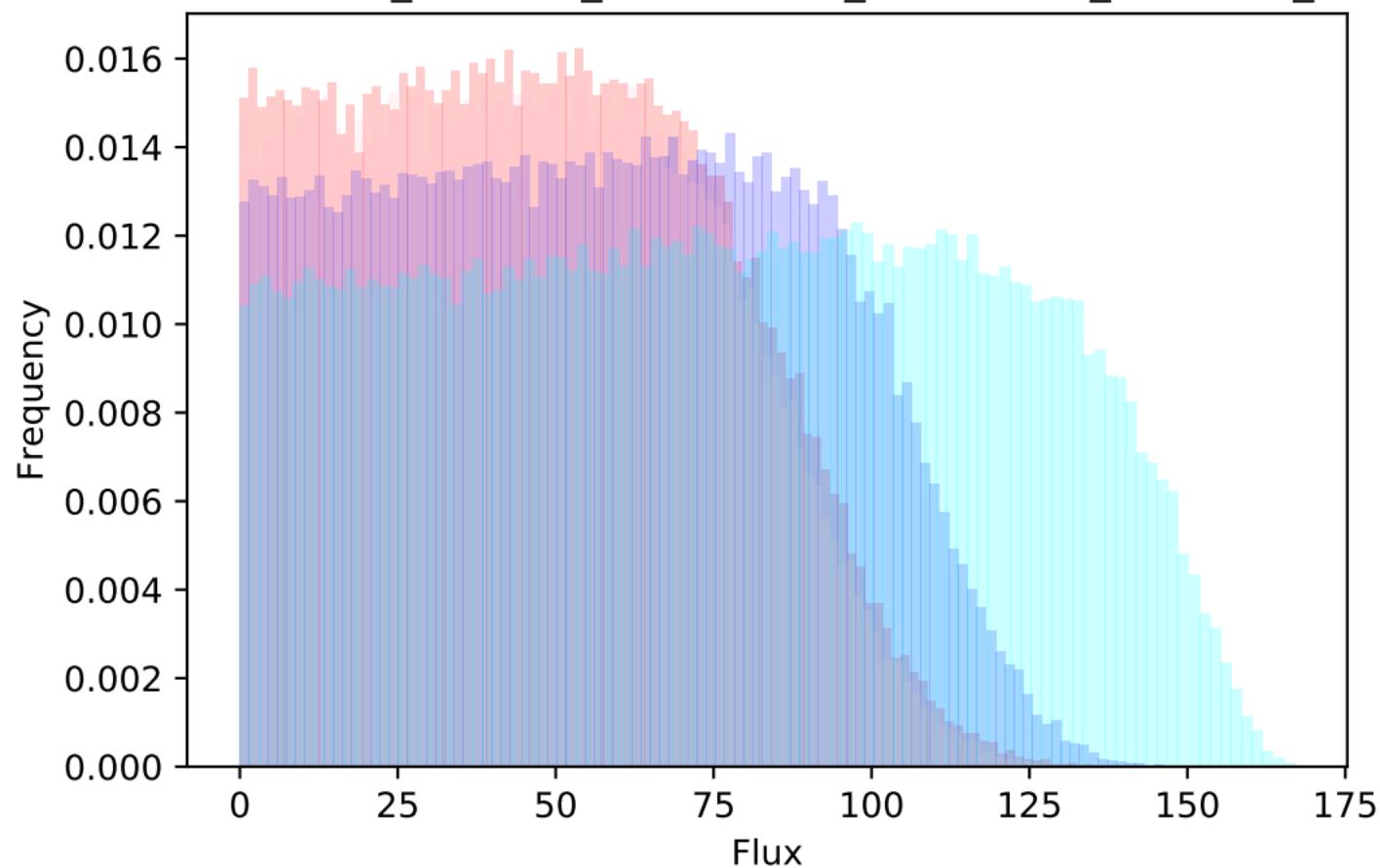


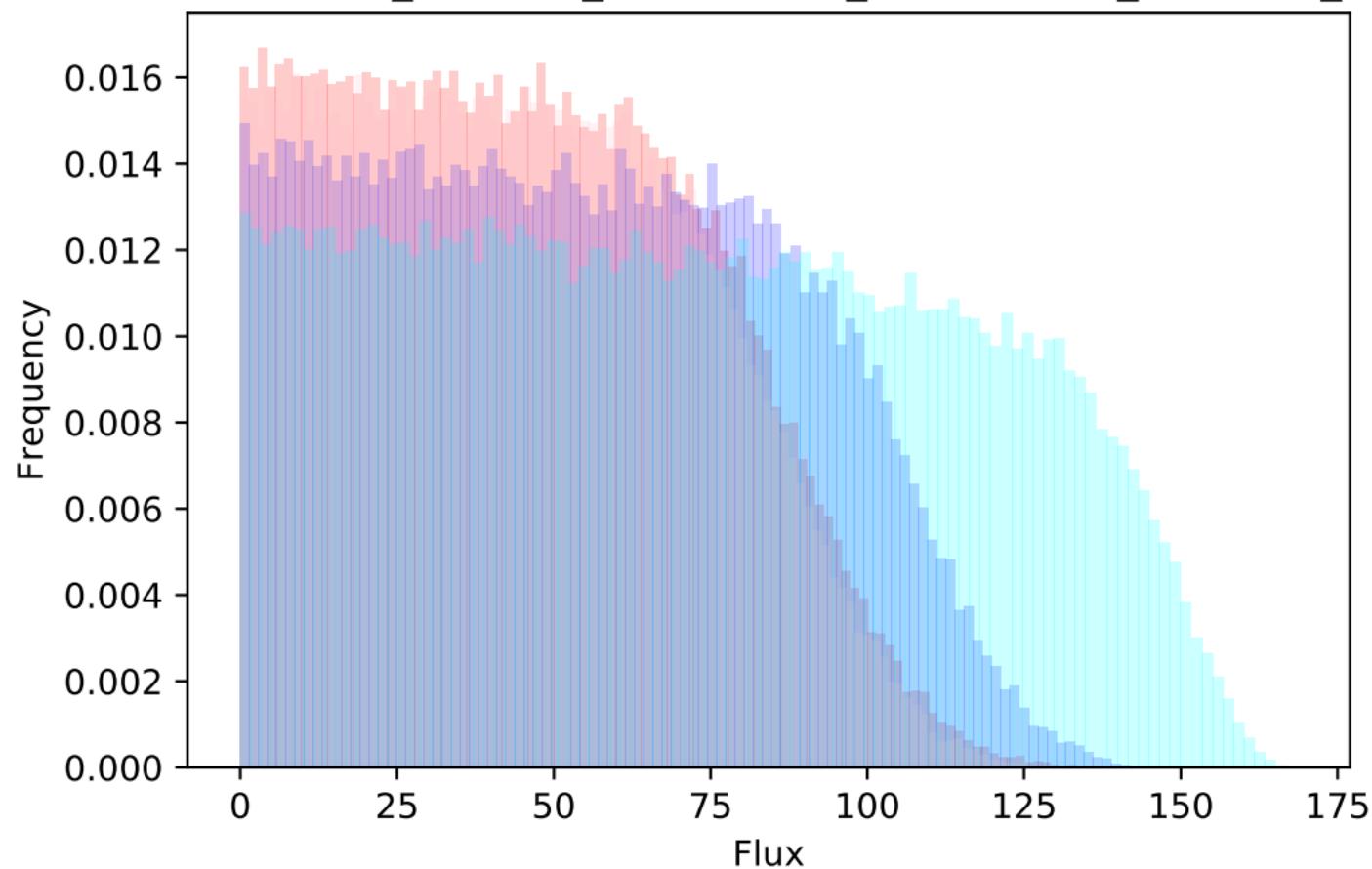
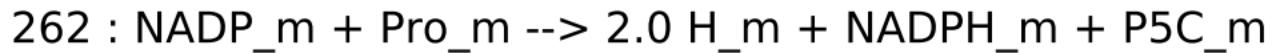
259 : Glu\_DASH\_SeA\_m --> H2O\_m + H\_m + P5C\_m



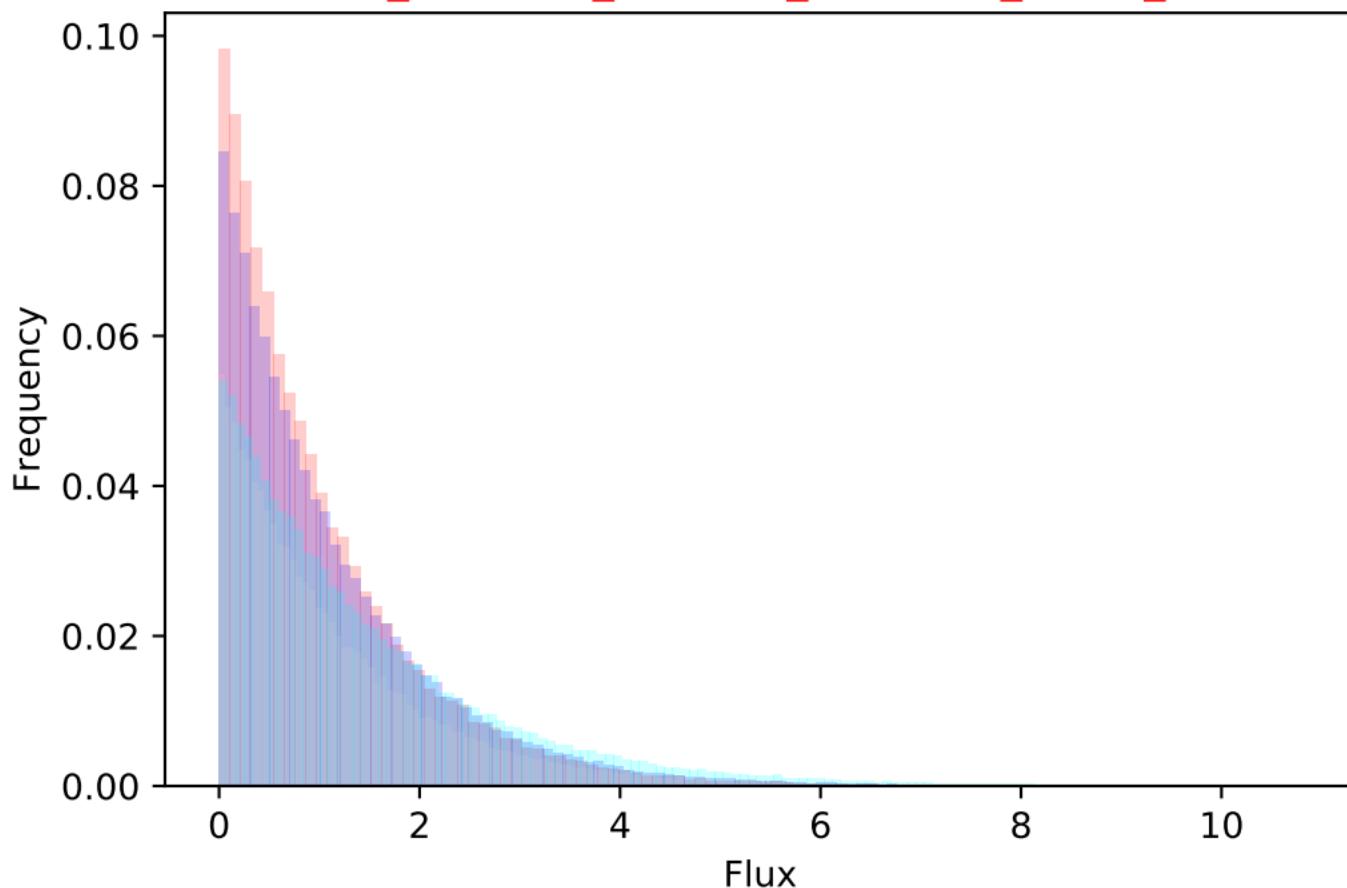


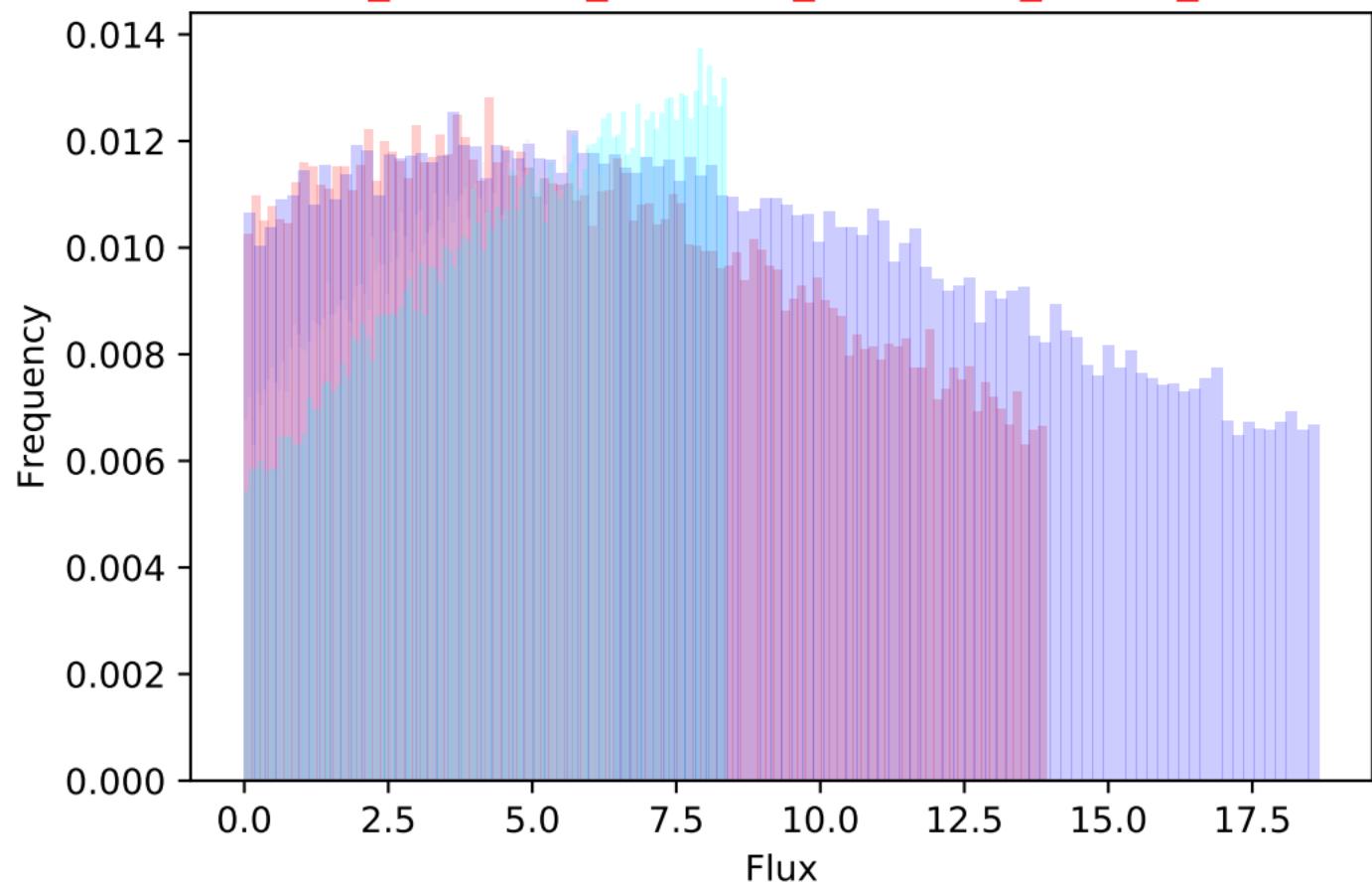
261 : NAD<sub>m</sub> + Pro<sub>m</sub> --> 2.0 H<sub>m</sub> + NADH<sub>m</sub> + P5C<sub>m</sub>



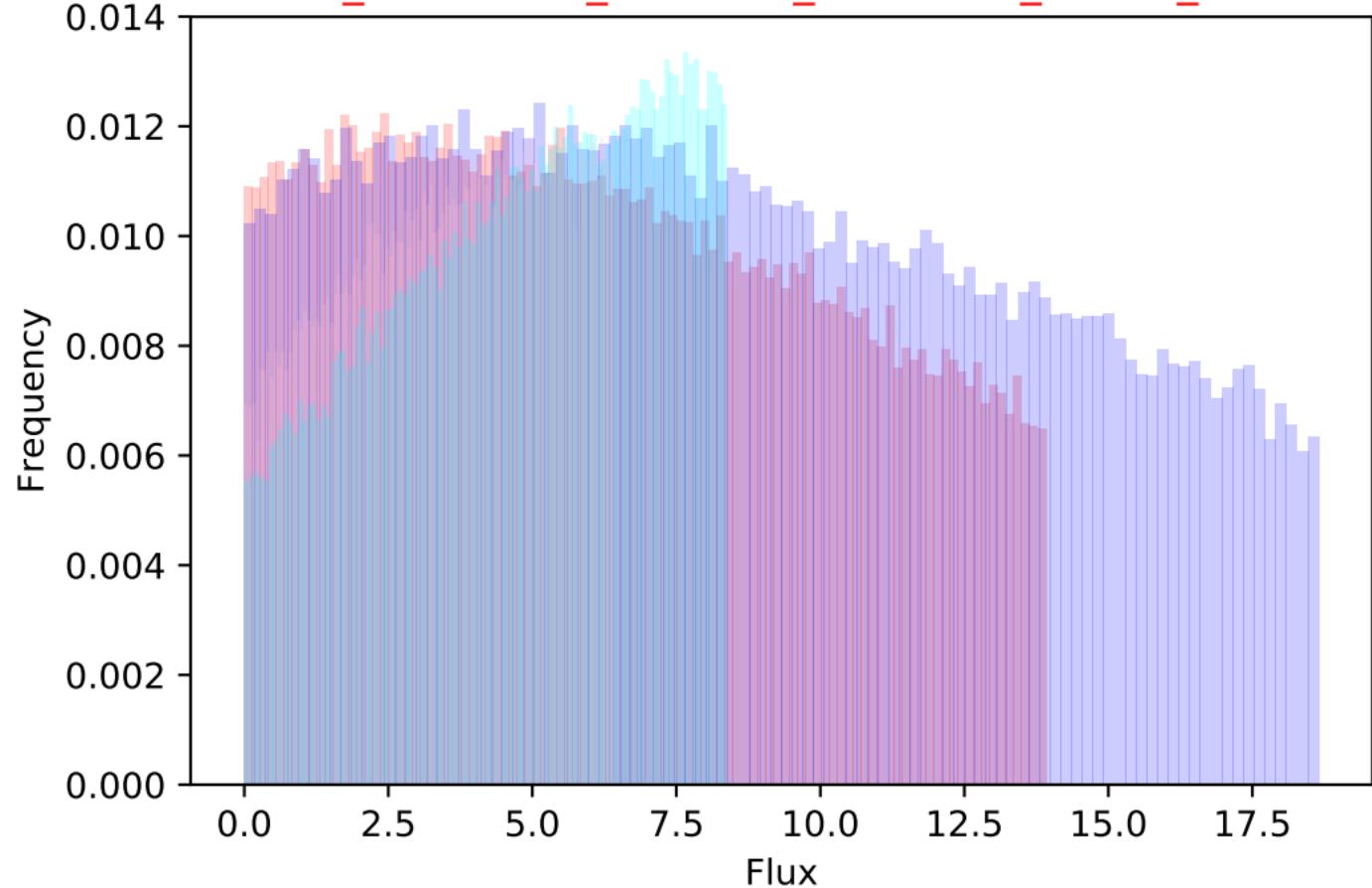


263 : 2.0 H2O\_h + NAD\_h + P5C\_h --> Glu\_h + H\_h + NADH\_h

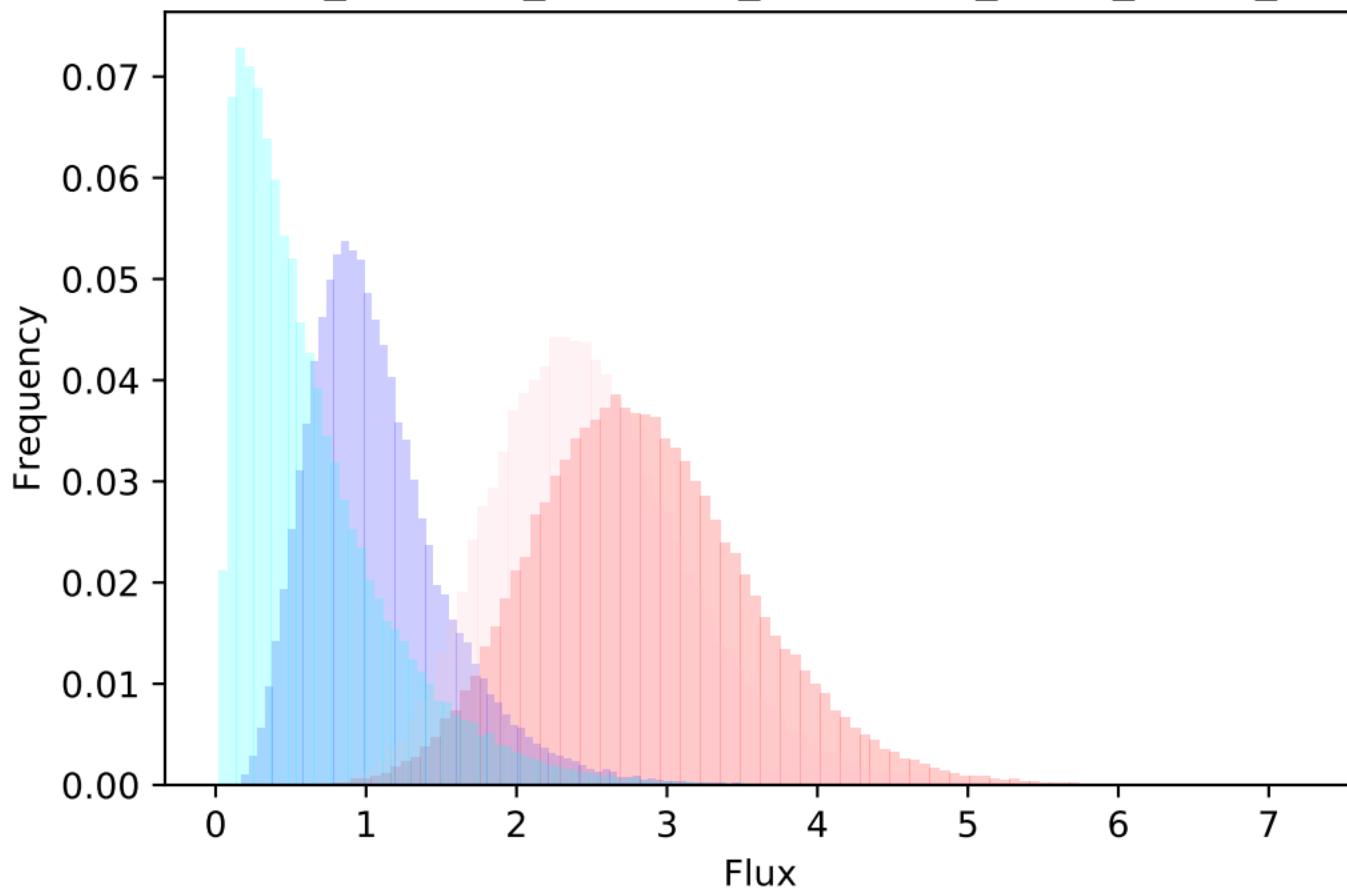




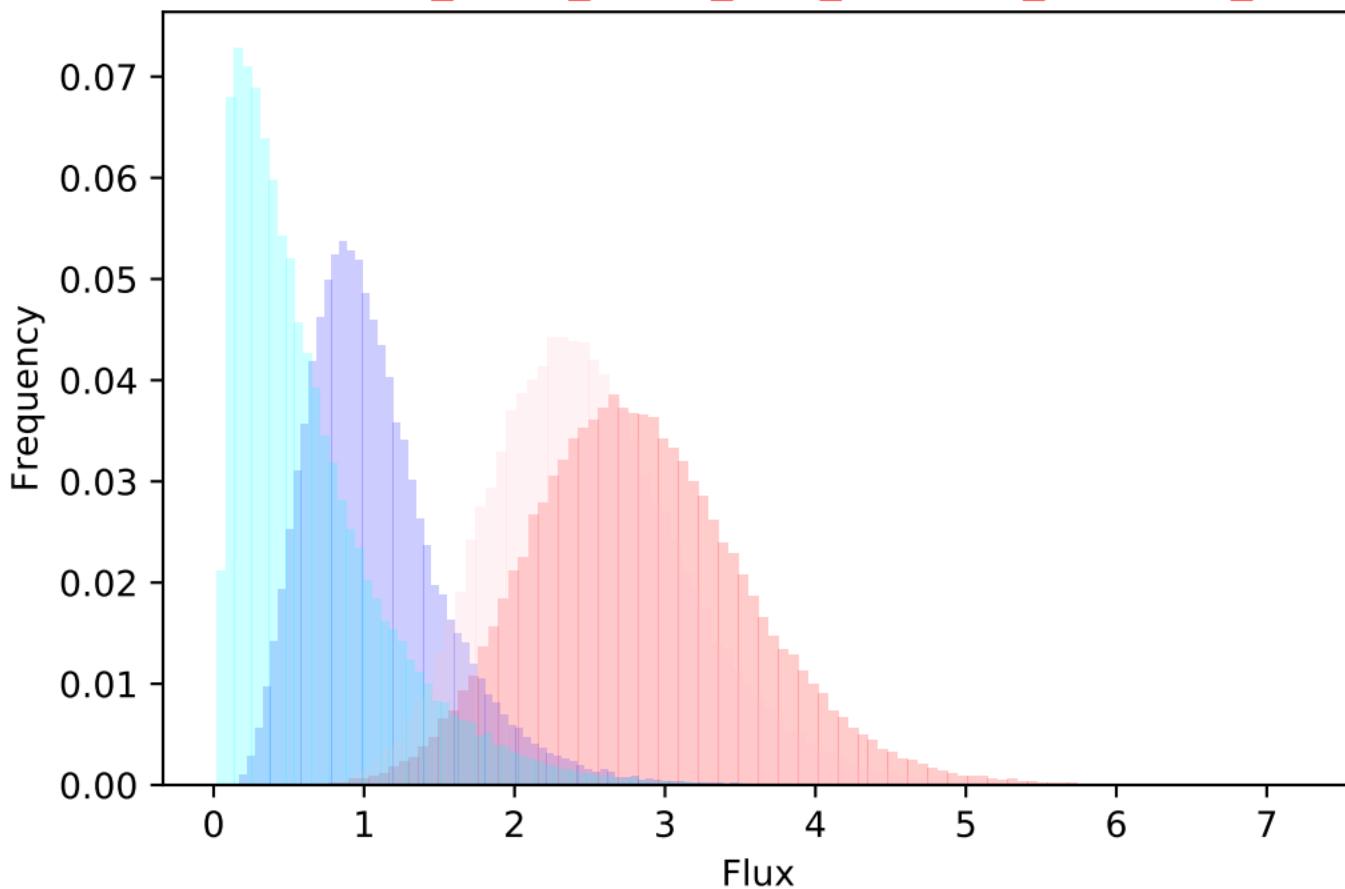
265 : 2.0 H<sub>2</sub>O\_m + NADP\_m + P5C\_m --> Glu\_m + H\_m + NADPH\_m

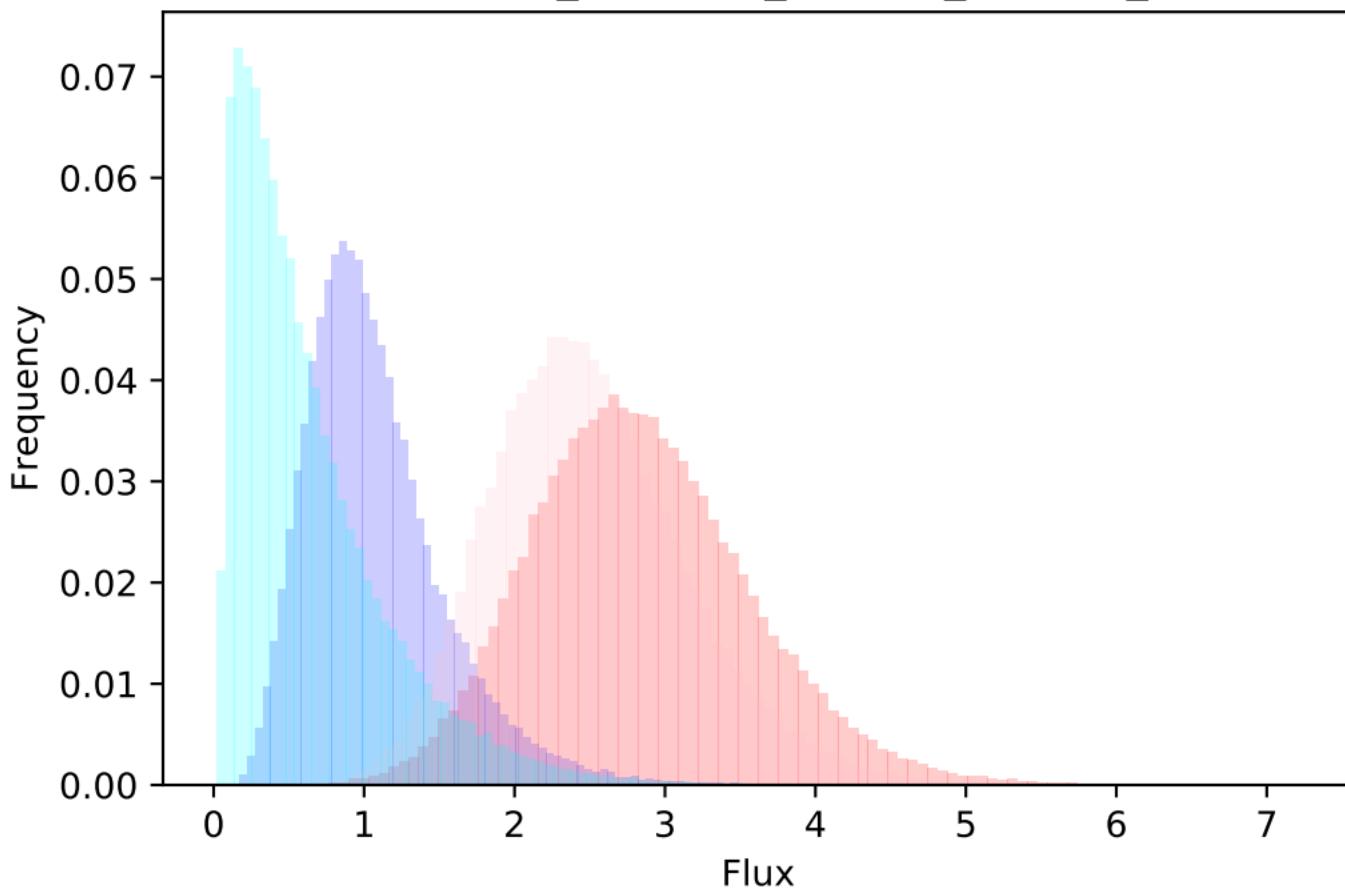


266 : NAD\_h + PGA\_h <=> H\_h + NADH\_h + P\_DASH\_HPR\_h

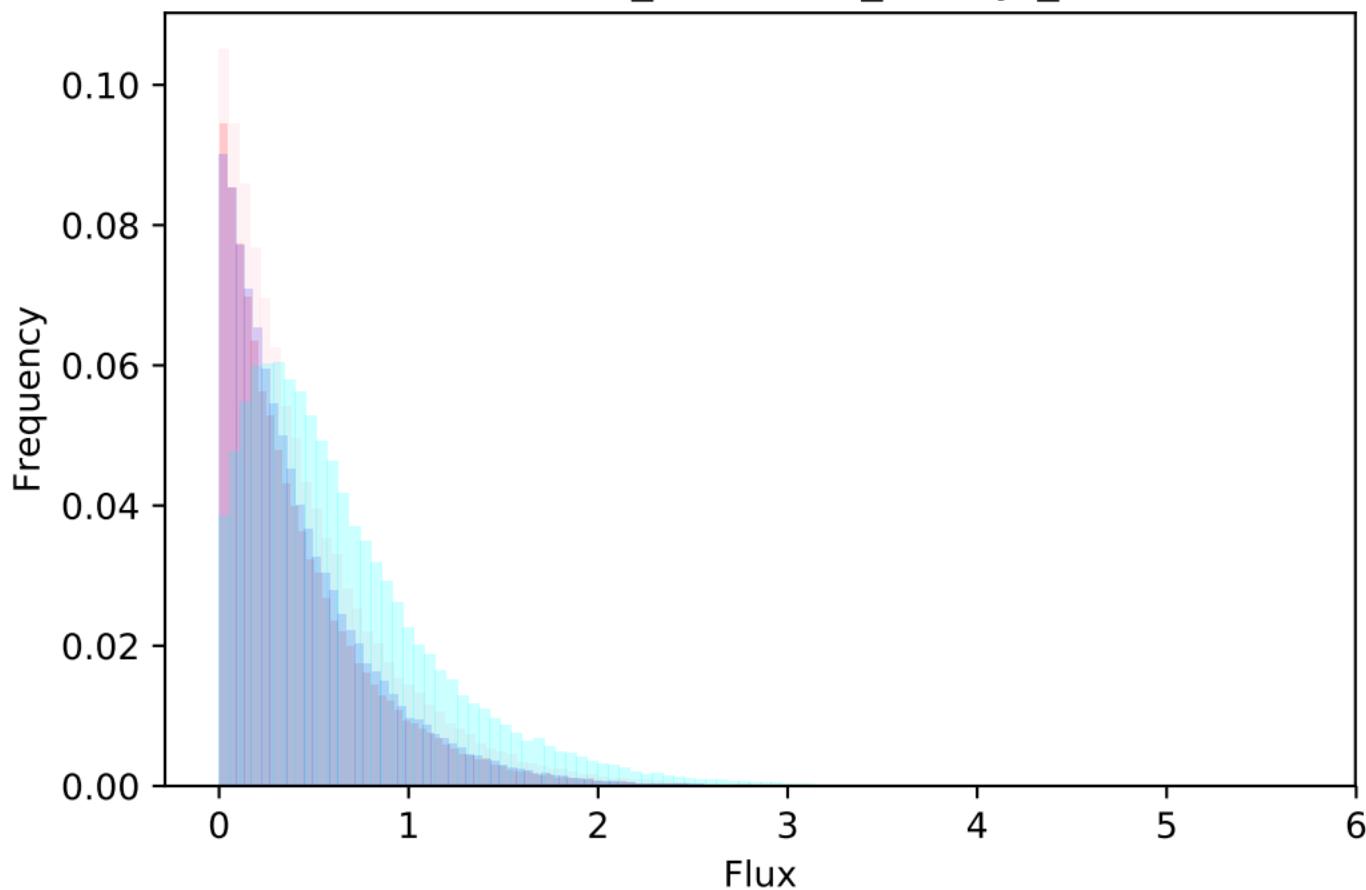


267 : Glu\_h + P\_DASH\_HPR\_h --> KG\_h + PSer\_h

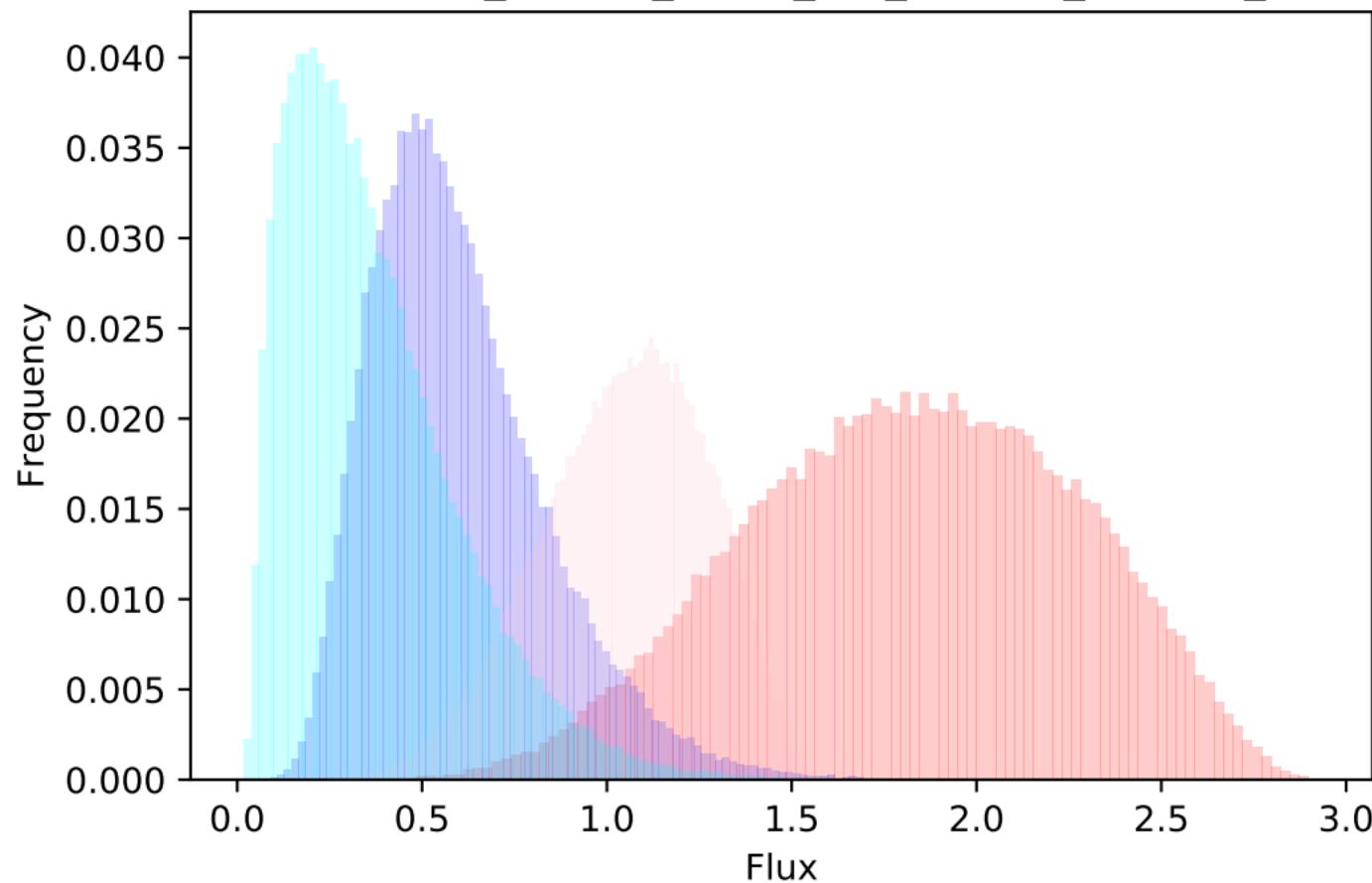




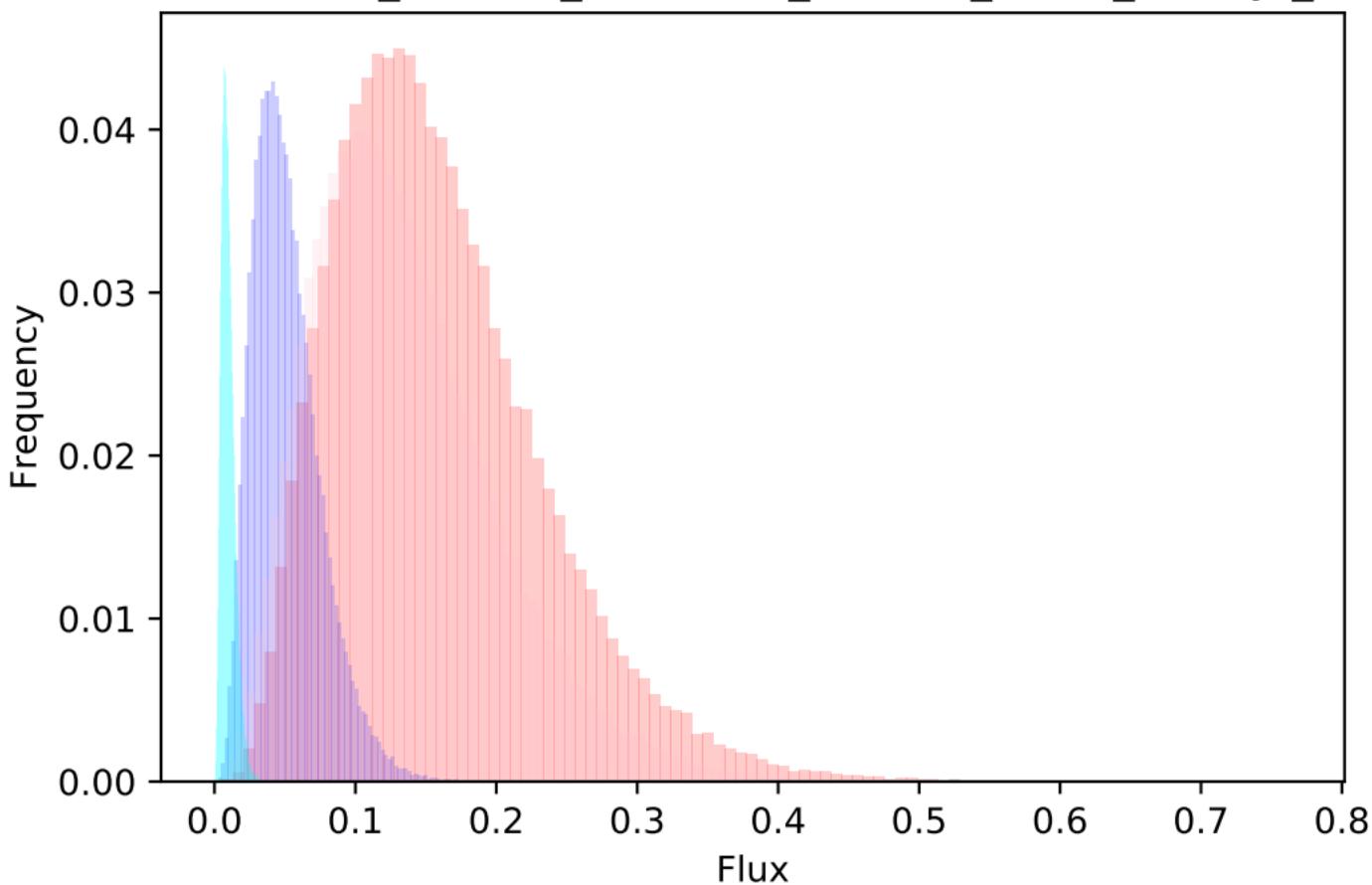
269 : Ser\_c --> NH4\_c + Pyr\_c



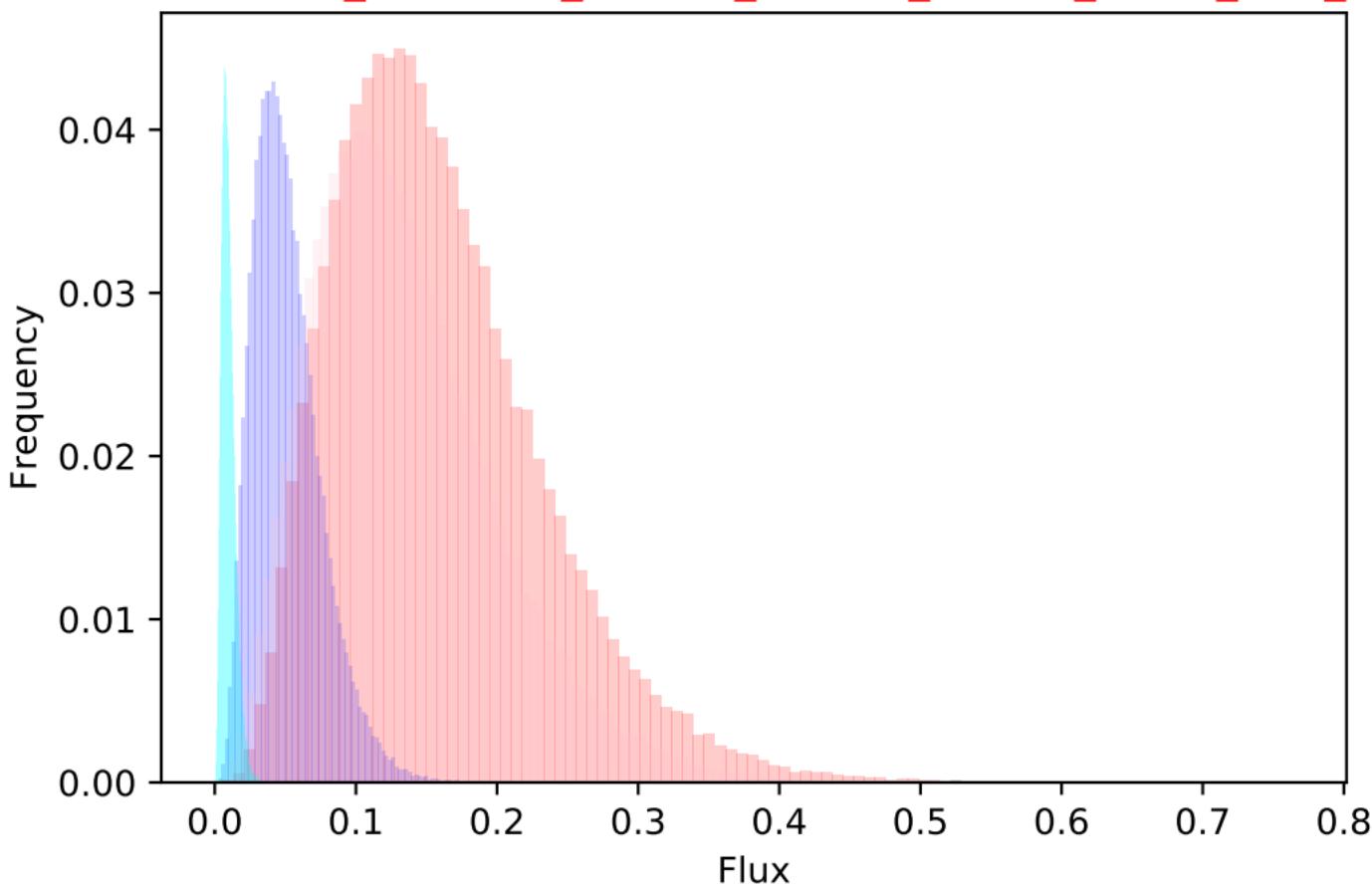
270 : H2O\_h + PH\_DASH\_Ser\_h --> Pi\_h + Thr\_h



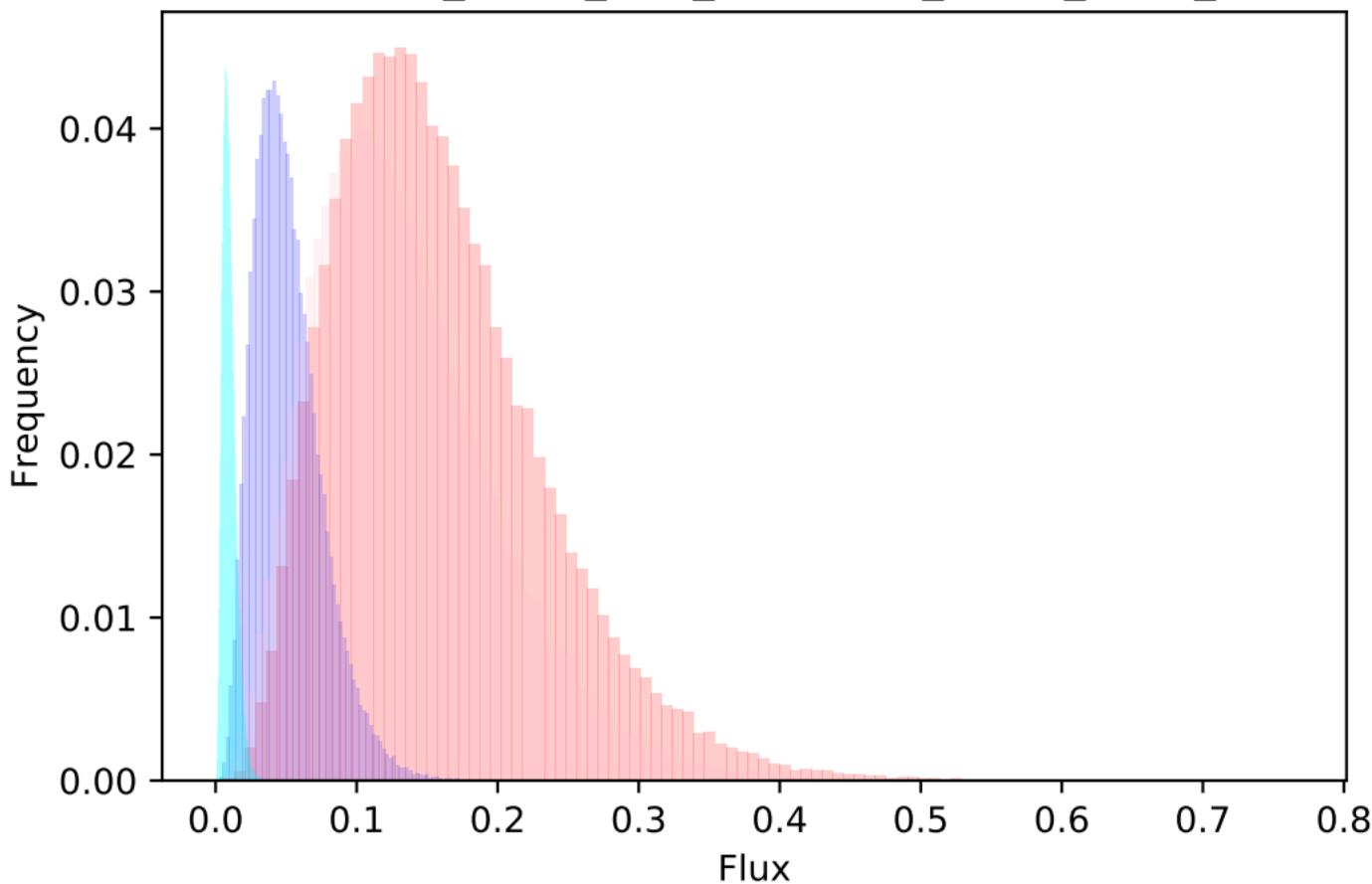
271 : CHR\_h + Gln\_h --> ANT\_h + Glu\_h + H\_h + Pyr\_h



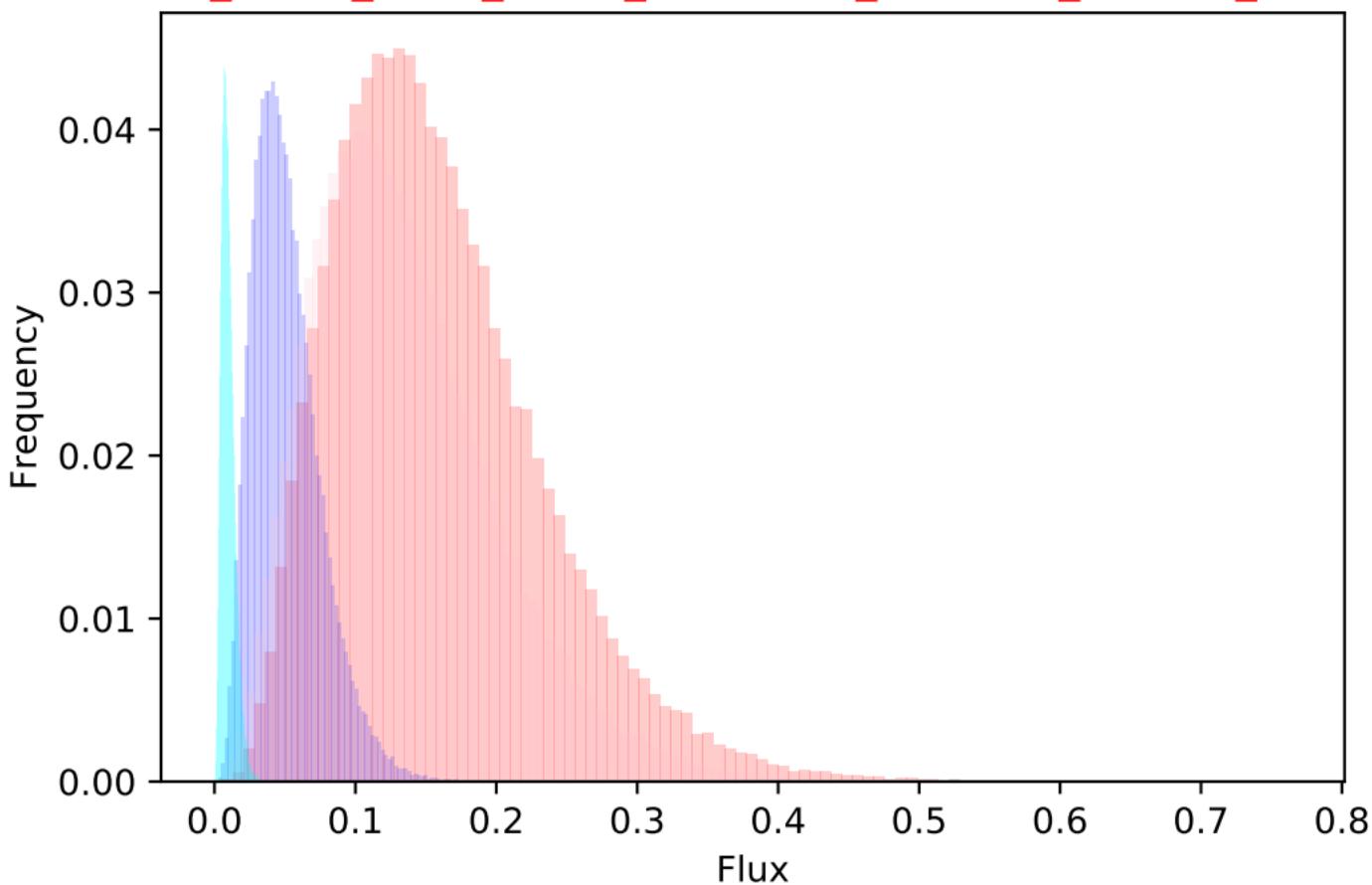
272 : ANT\_h + PRPP\_h --> H\_h + PPi\_h + PR\_DASH\_ANT\_h



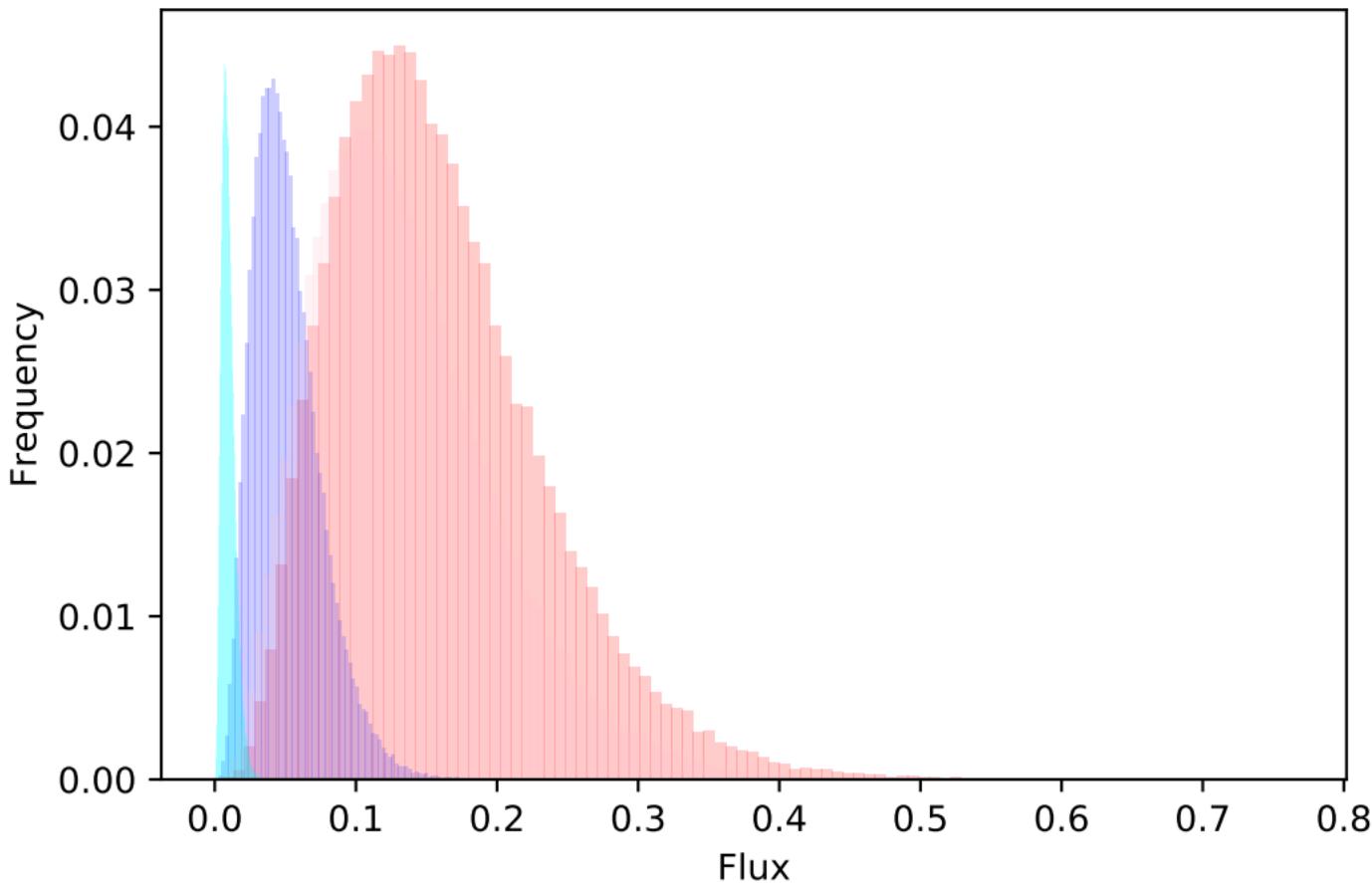
273 : PR\_DASH\_ANT\_h --> CPD\_DASH\_Ru5P\_h



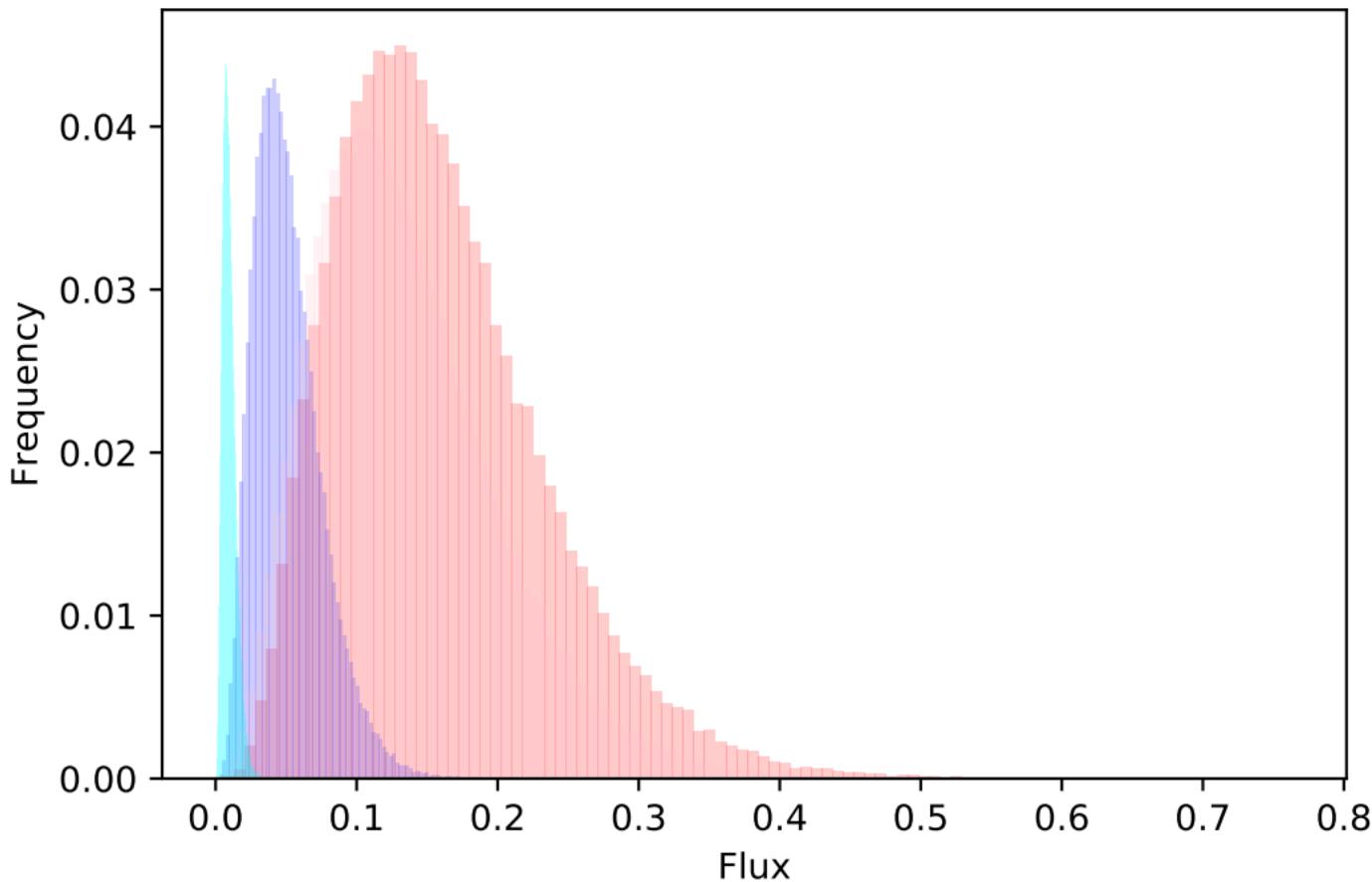
274 : CPD\_DASH\_Ru5P\_h + H\_h --> CO2\_h + H2O\_h + Ind\_DASH\_GP\_h



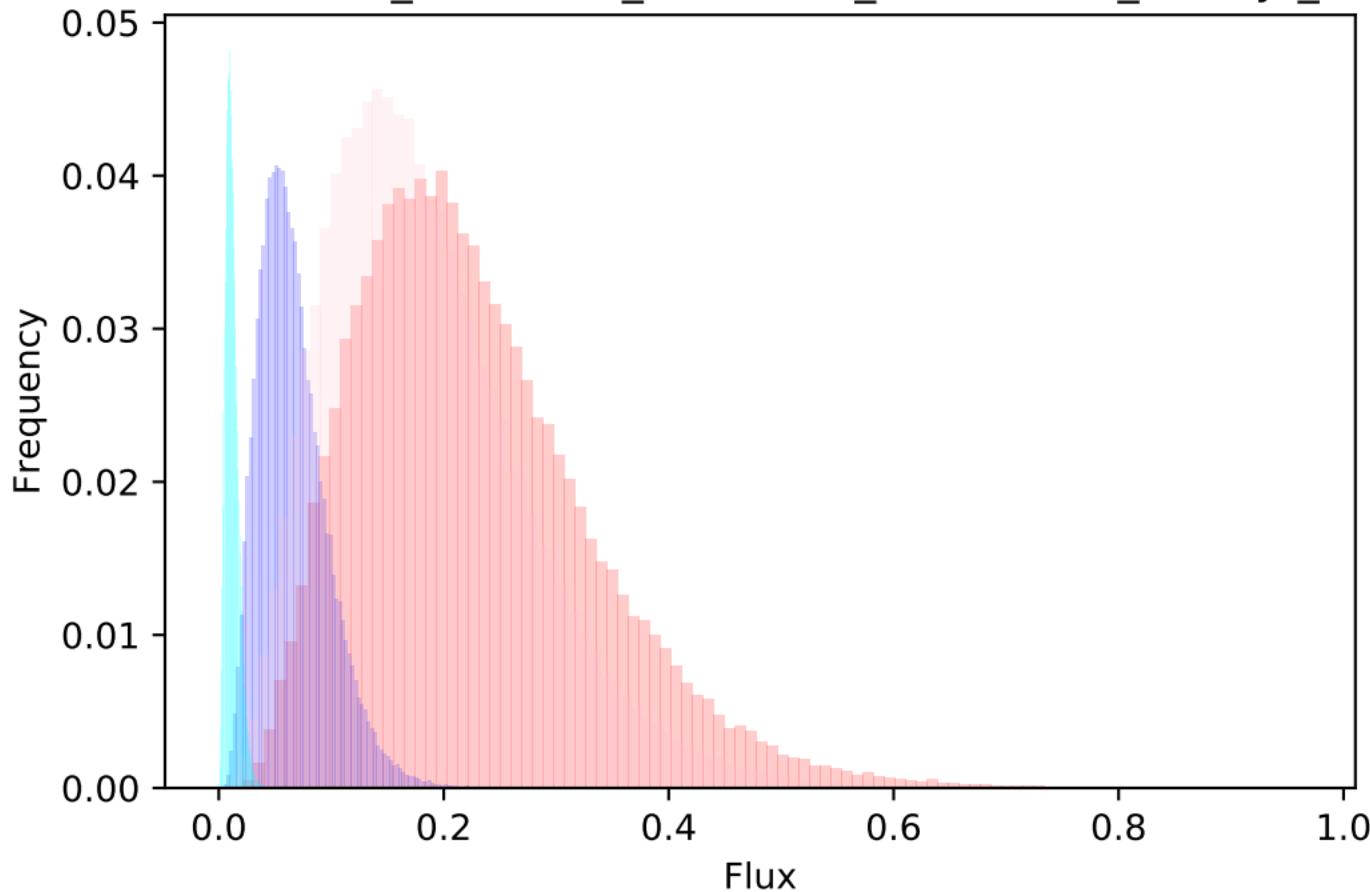
275 : Ind\_DASH\_GP\_h --> GAP\_h + Ind\_h



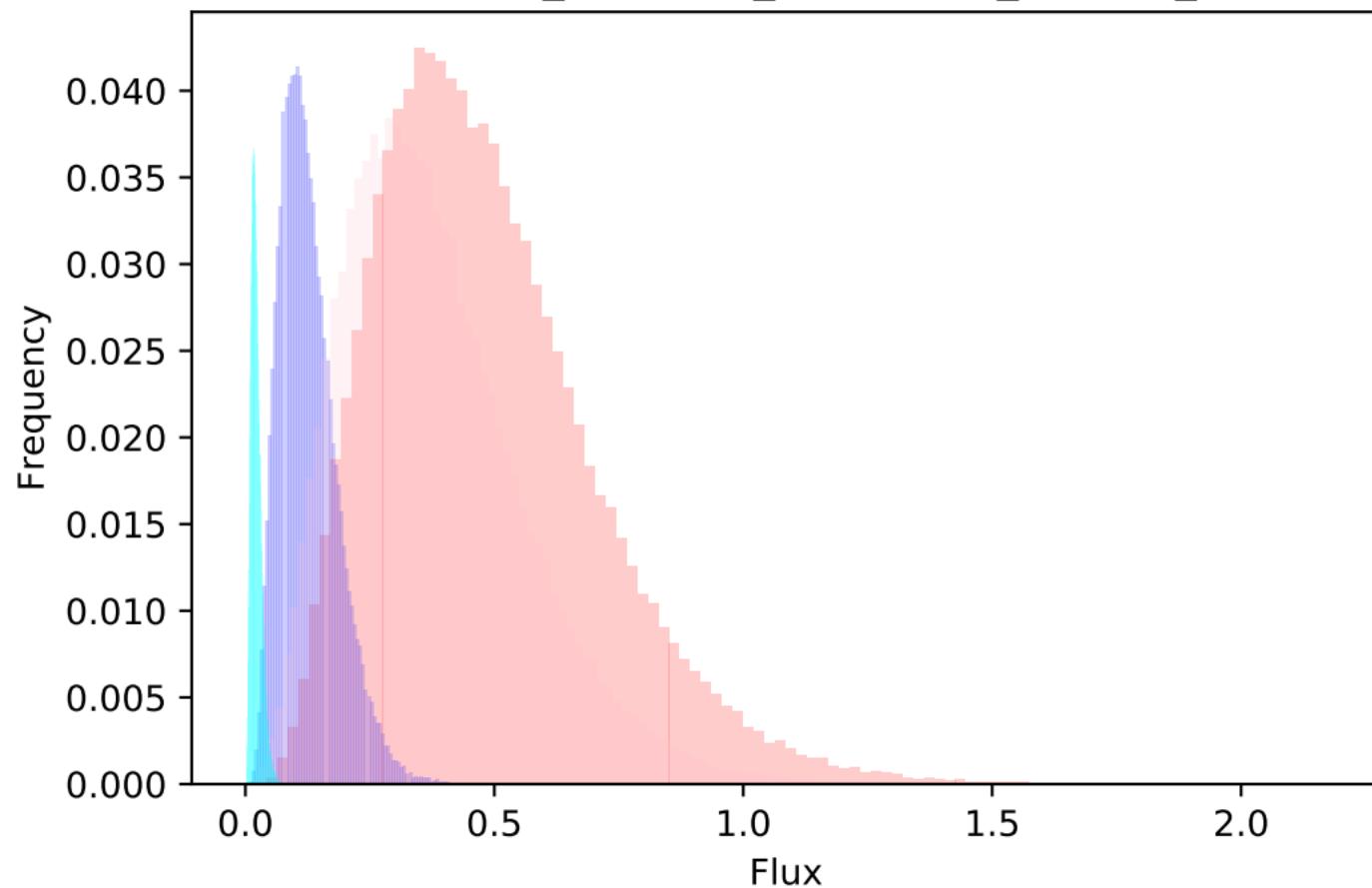
276 : Ind\_h + Ser\_h --> H2O\_h + Trp\_h

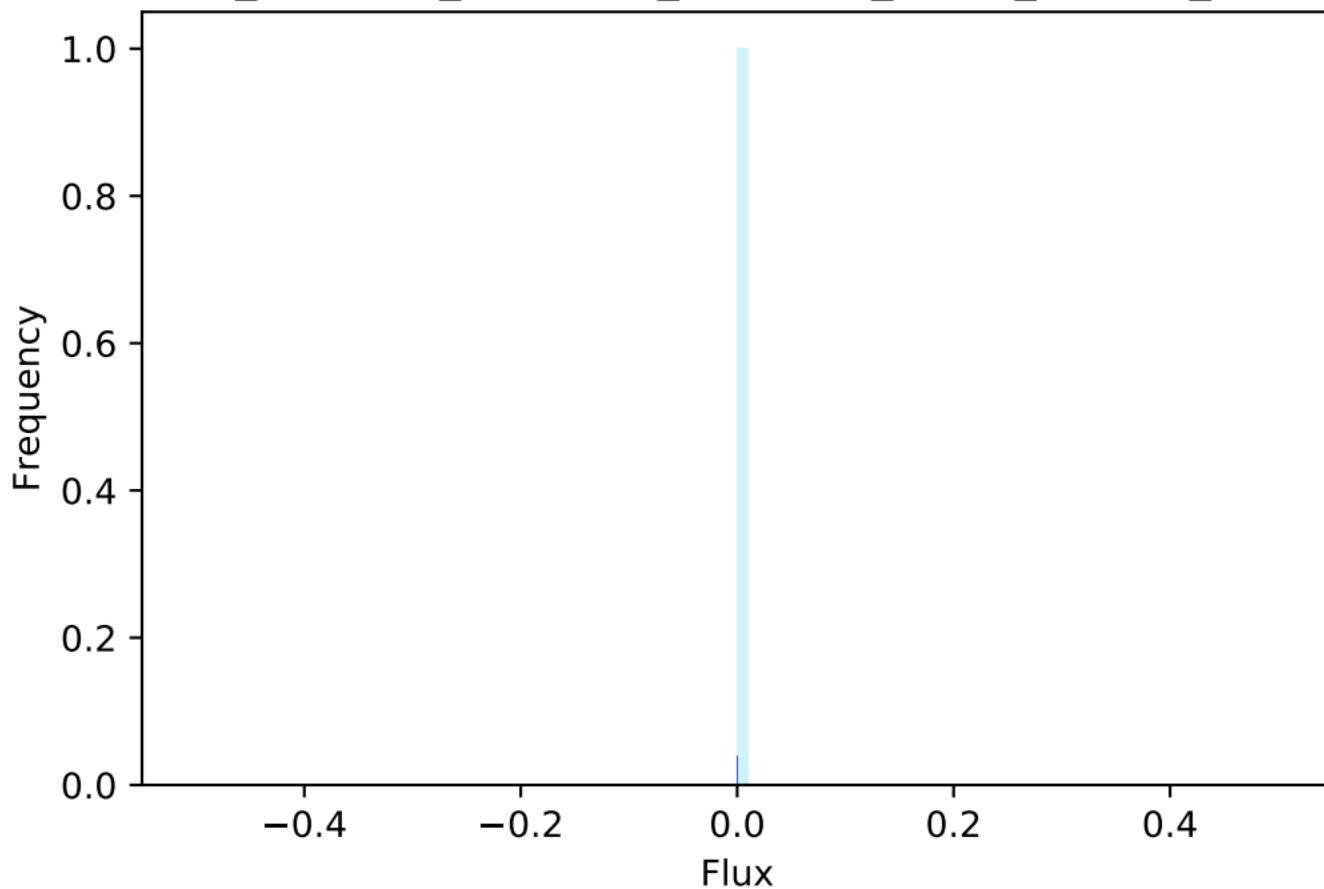
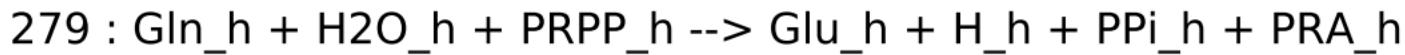


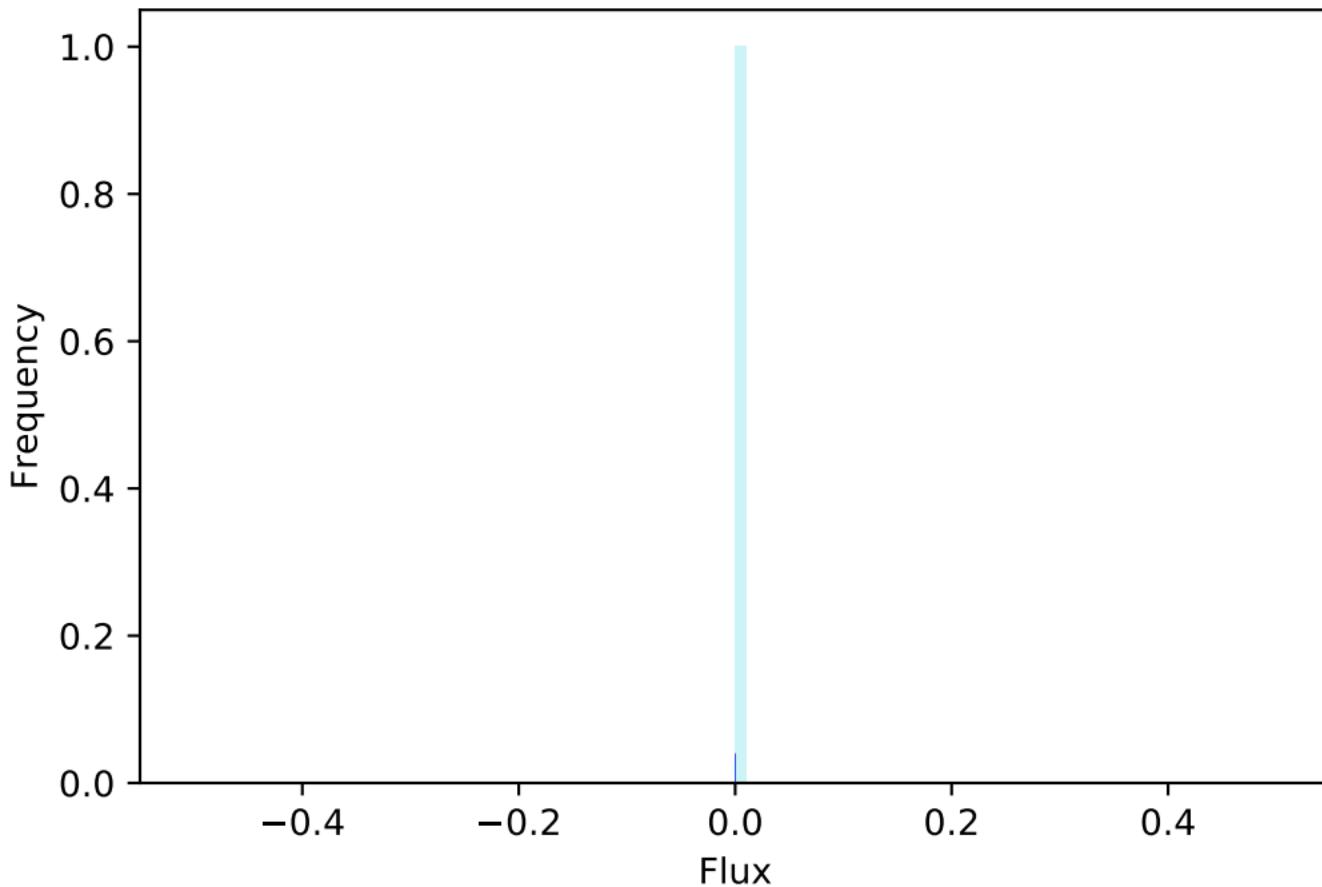
277 : AGN\_h + NADP\_h  $\rightarrow$  CO2\_h + NADPH\_h + Tyr\_h

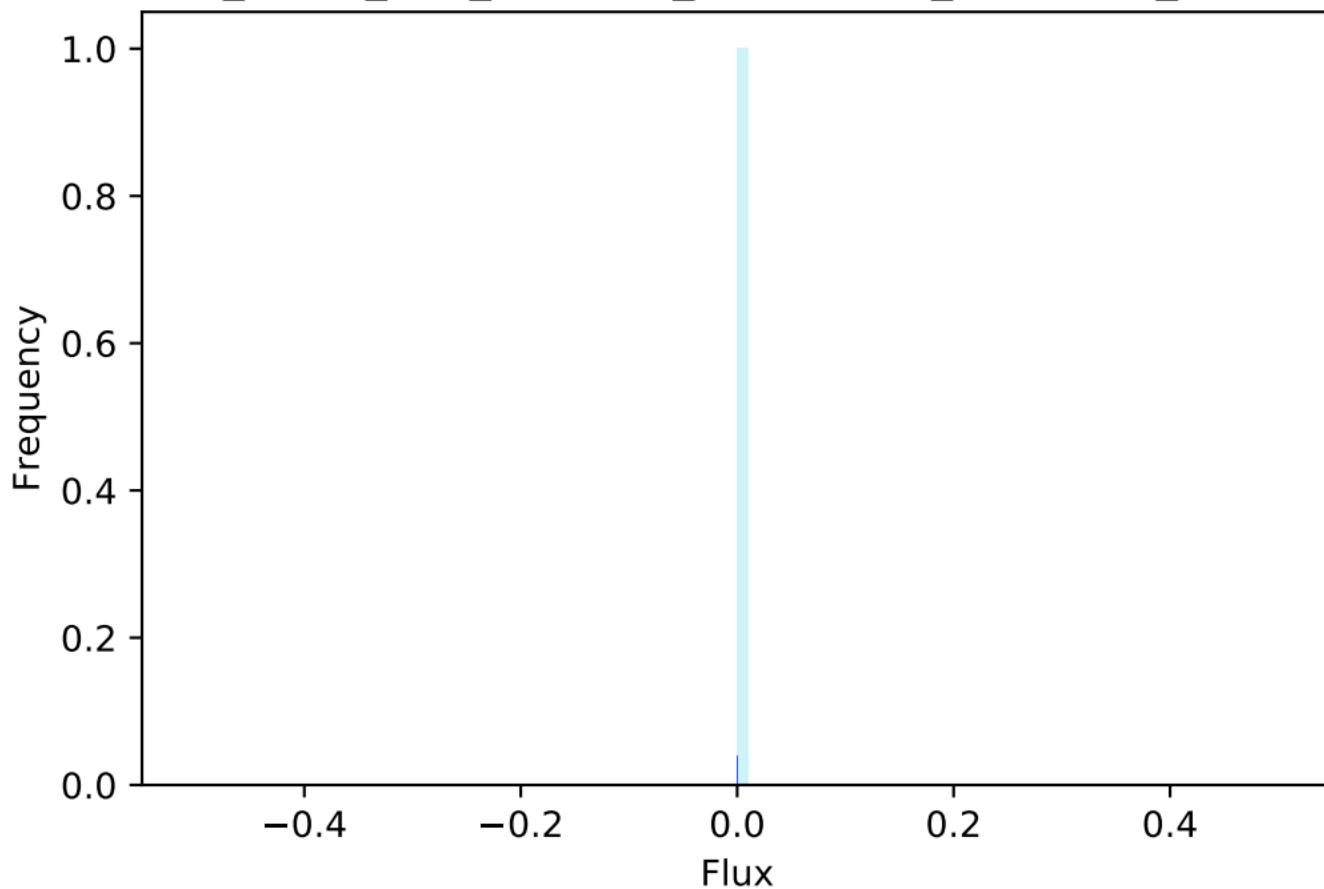
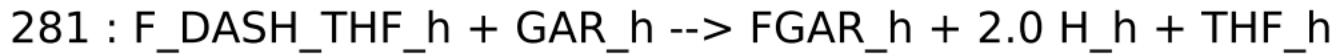


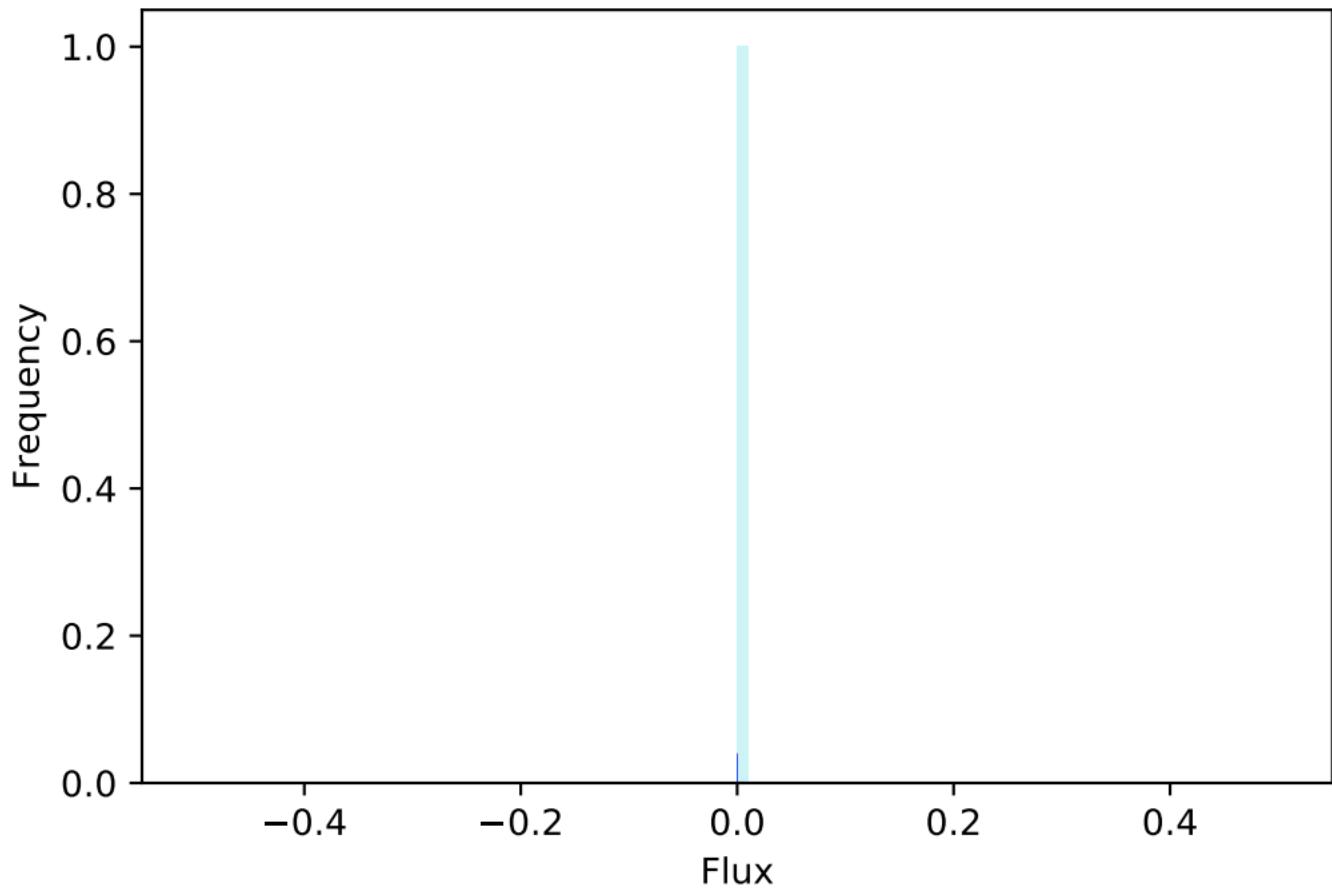
278 : Glu\_h + MOB\_h <=> KG\_h + Val\_h



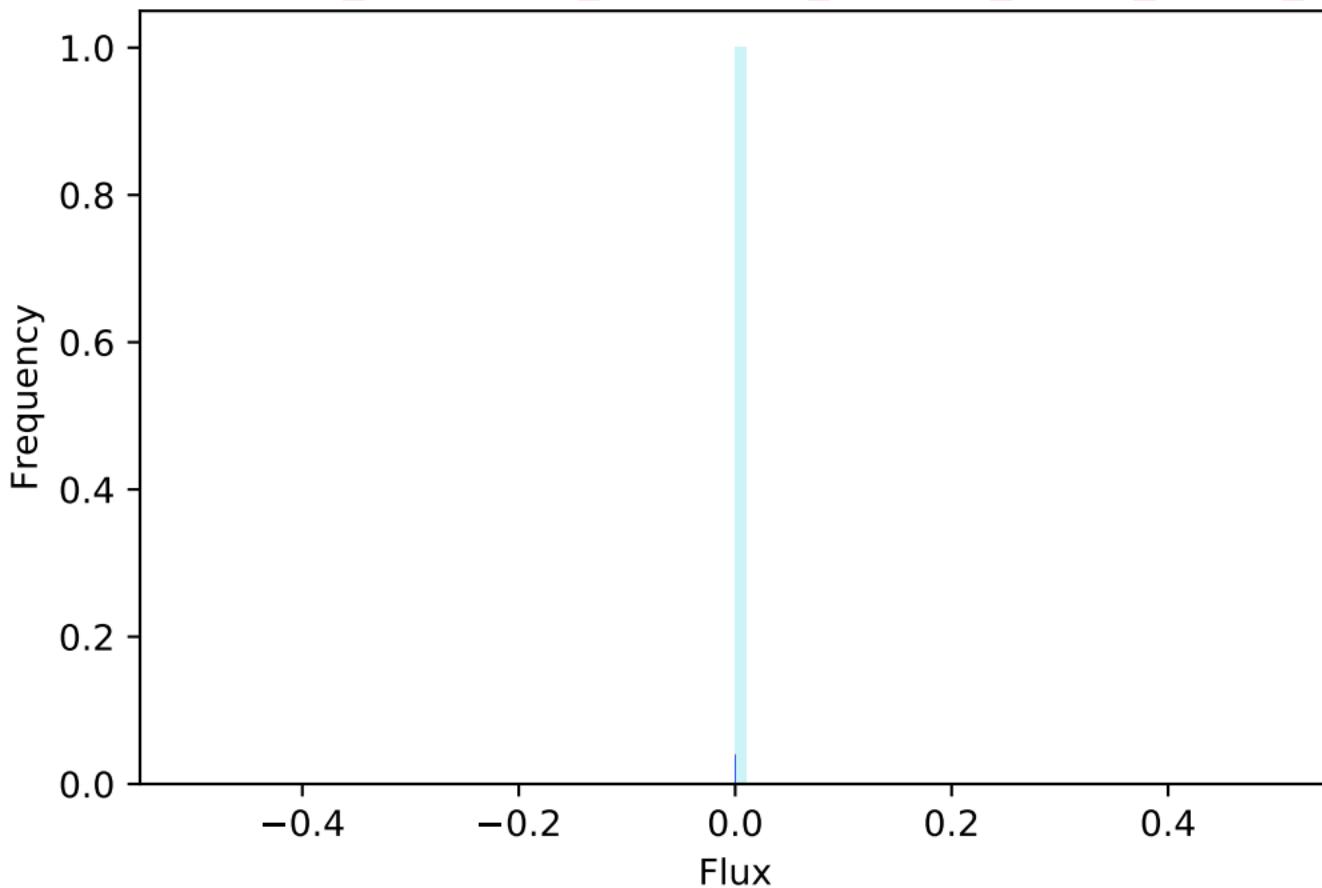


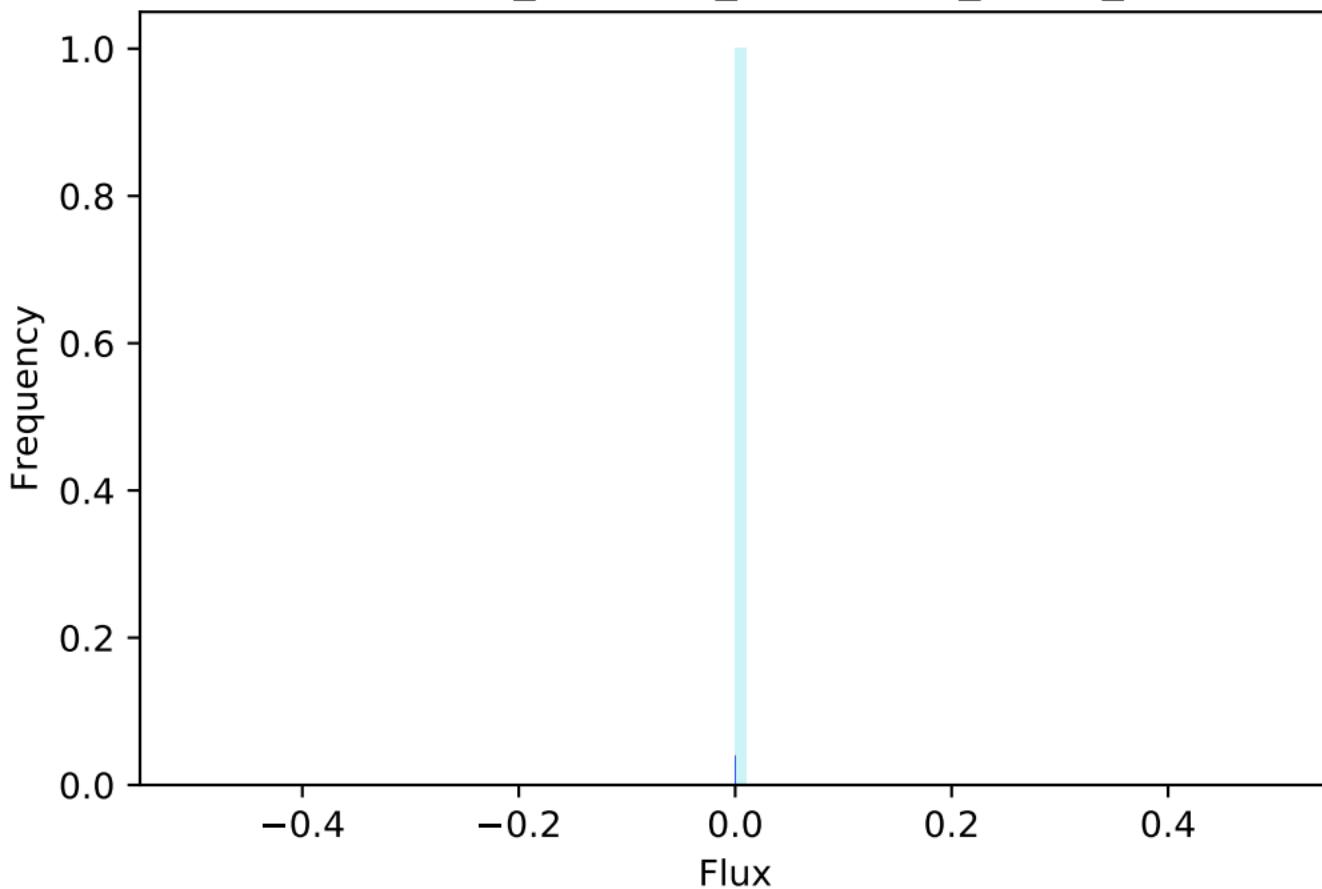
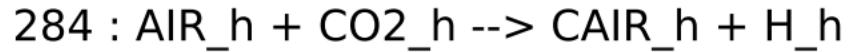




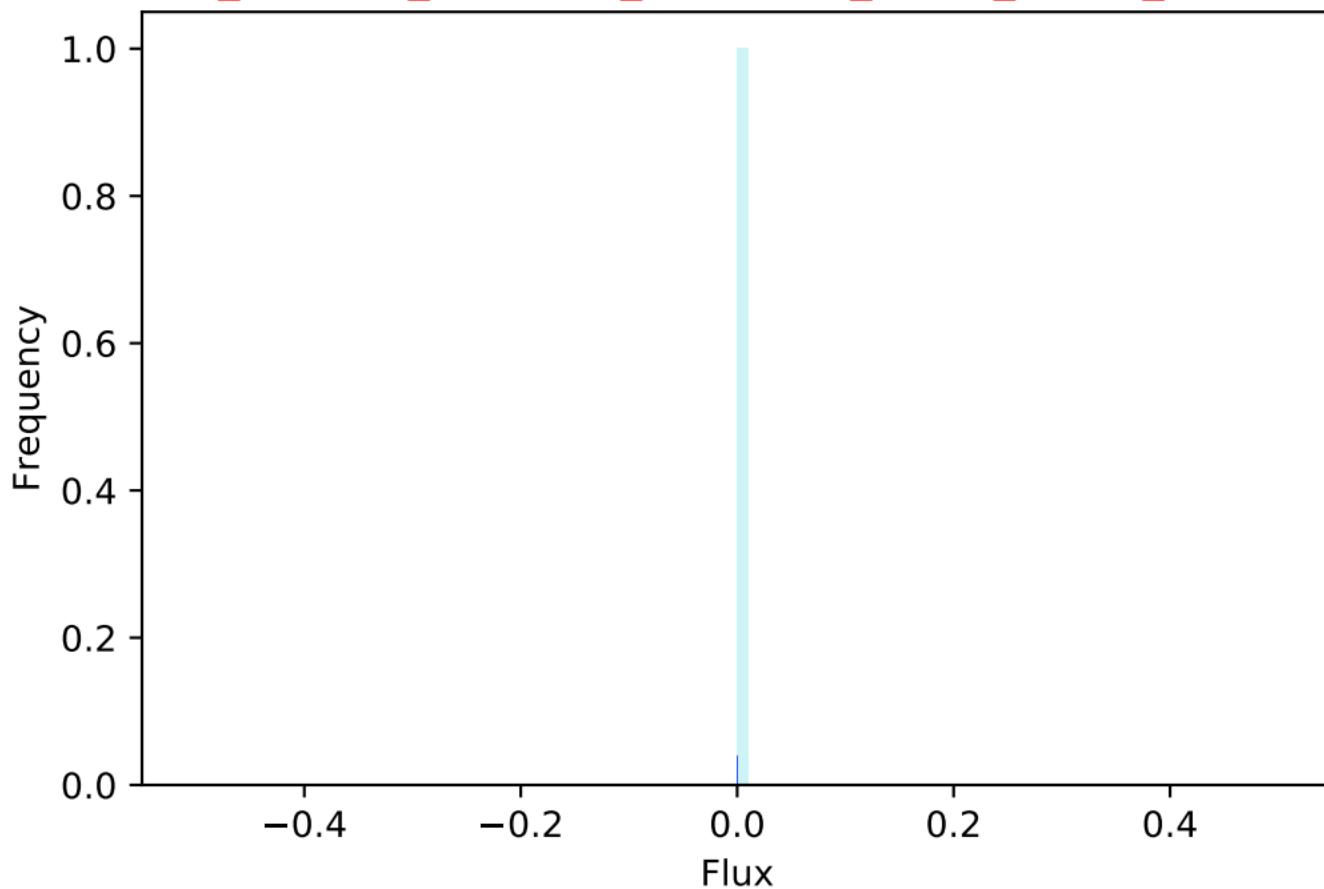


283 : ATP\_h + FGAM\_h --> ADP\_h + AIR\_h + H\_h + Pi\_h

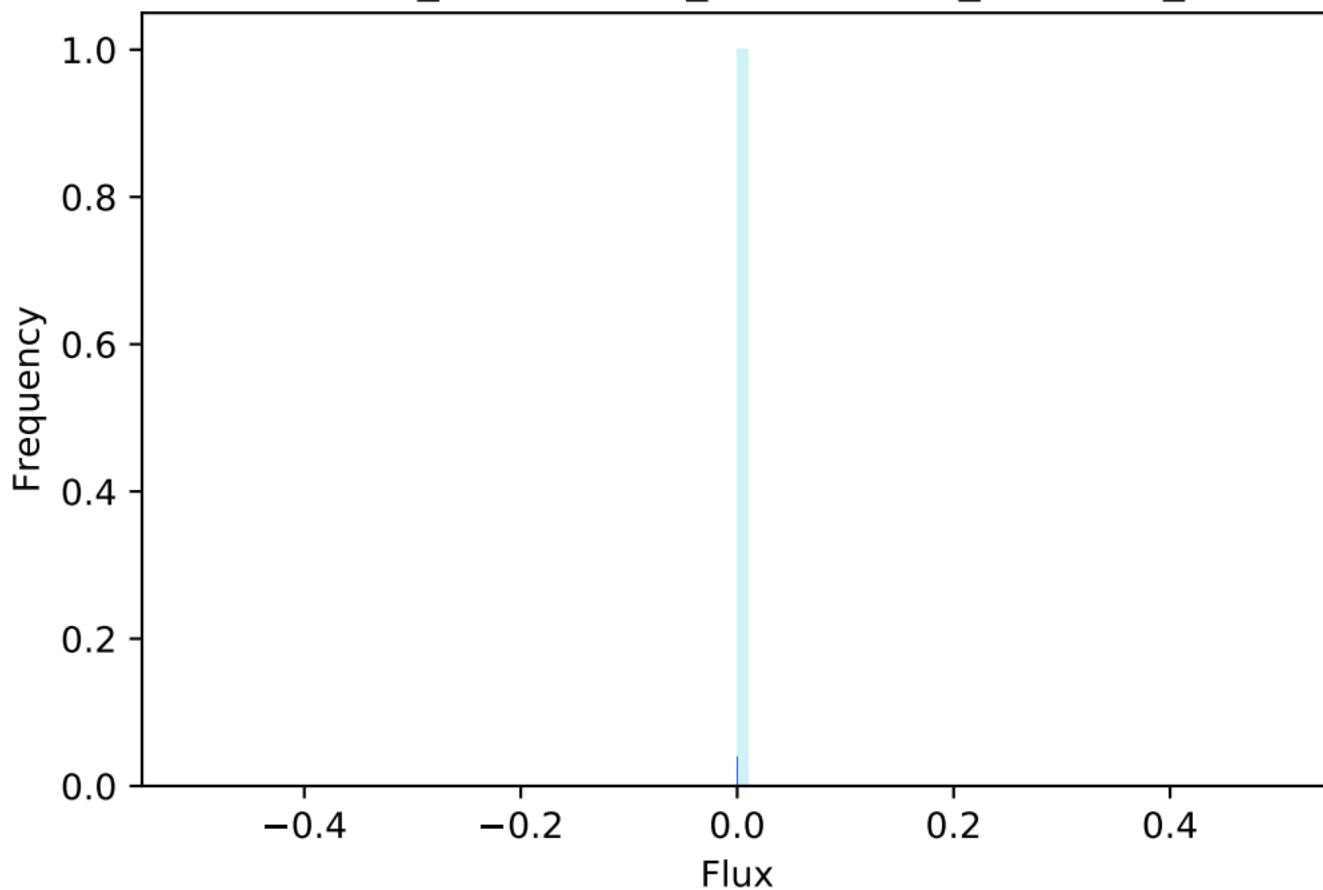




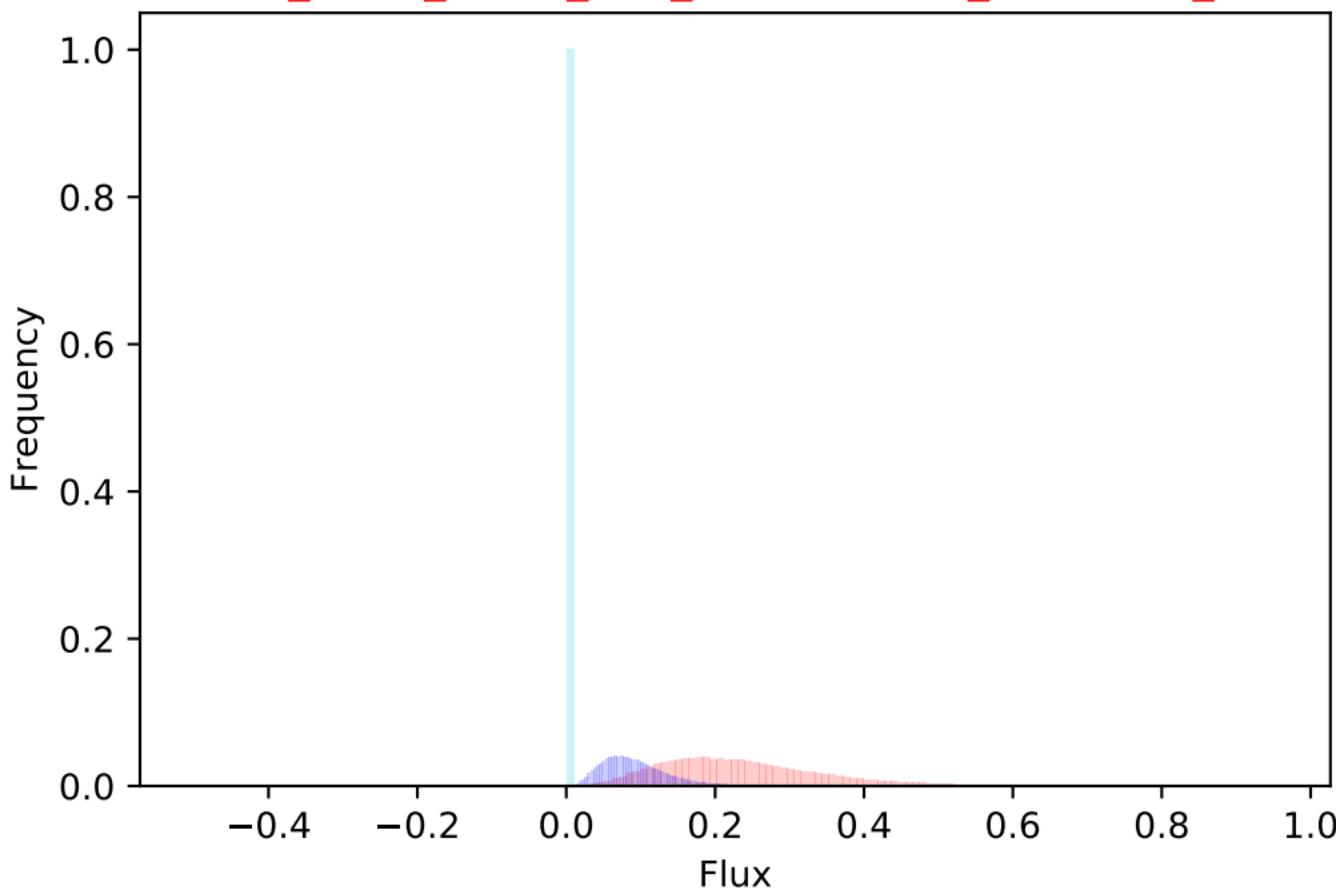
285 : ATP\_h + Asp\_h + CAIR\_h --> ADP\_h + H\_h + Pi\_h + SAICAR\_h



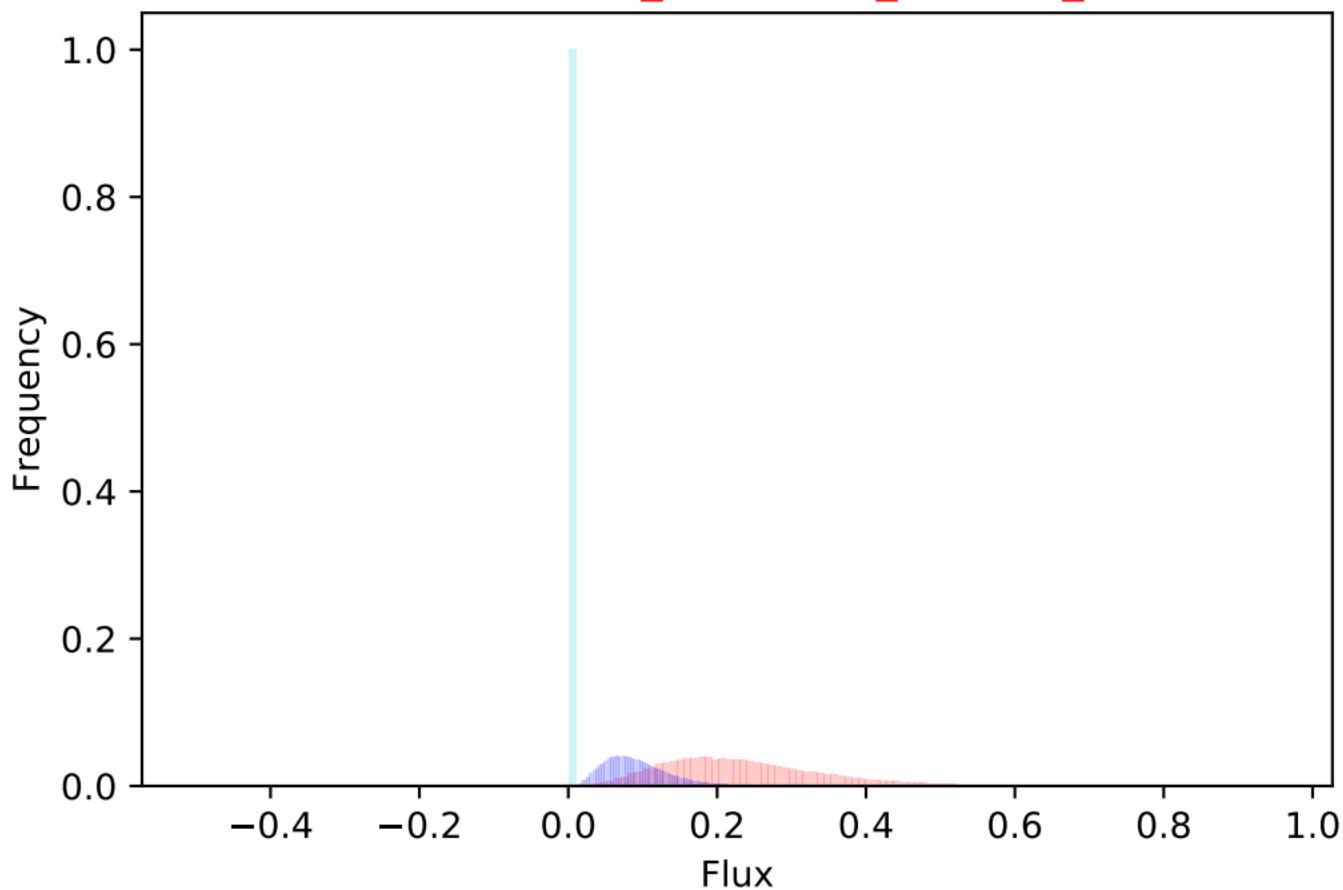
286 : H\_h + SAICAR\_h --> AICAR\_h + Fum\_h

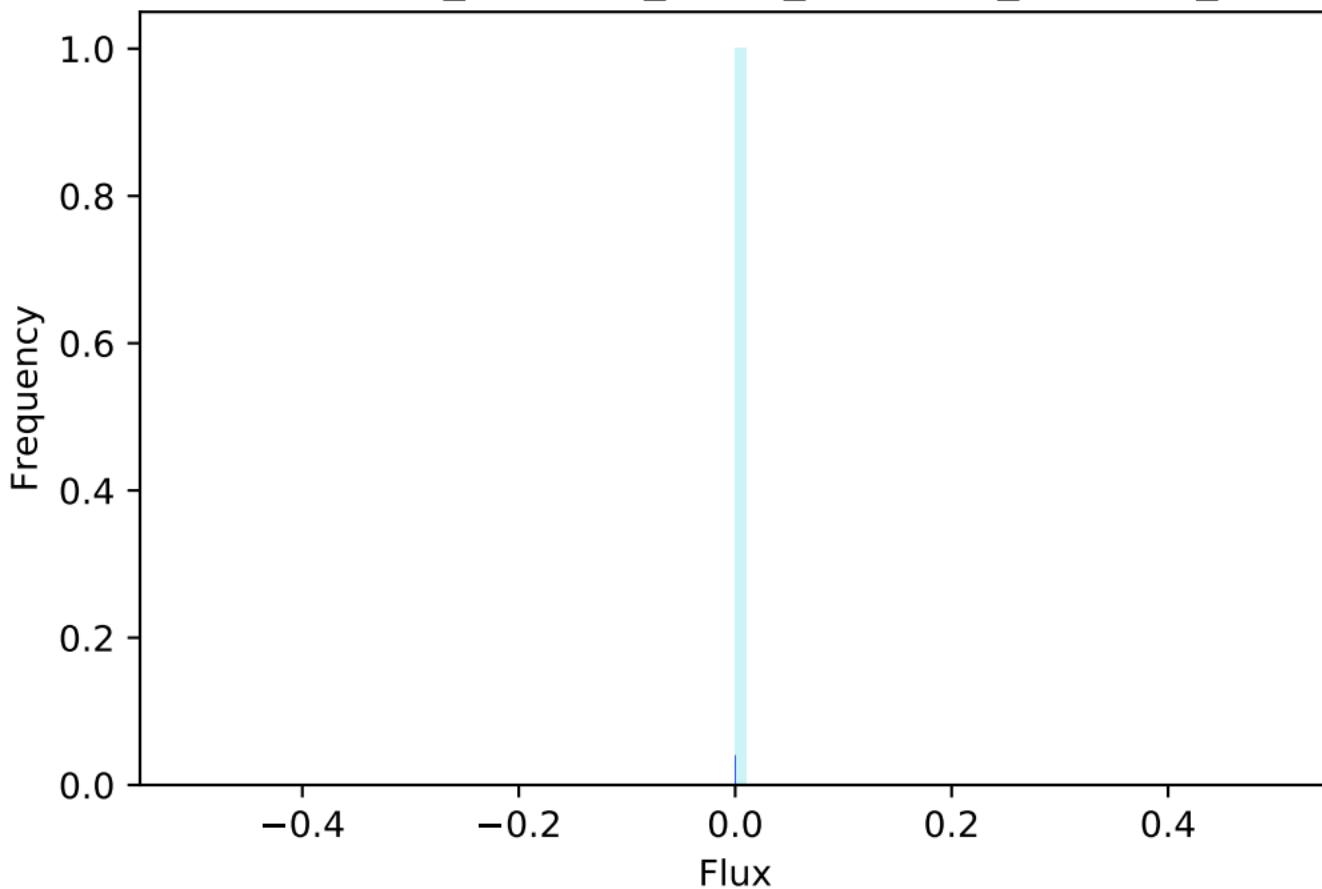
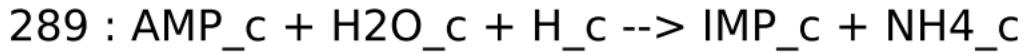


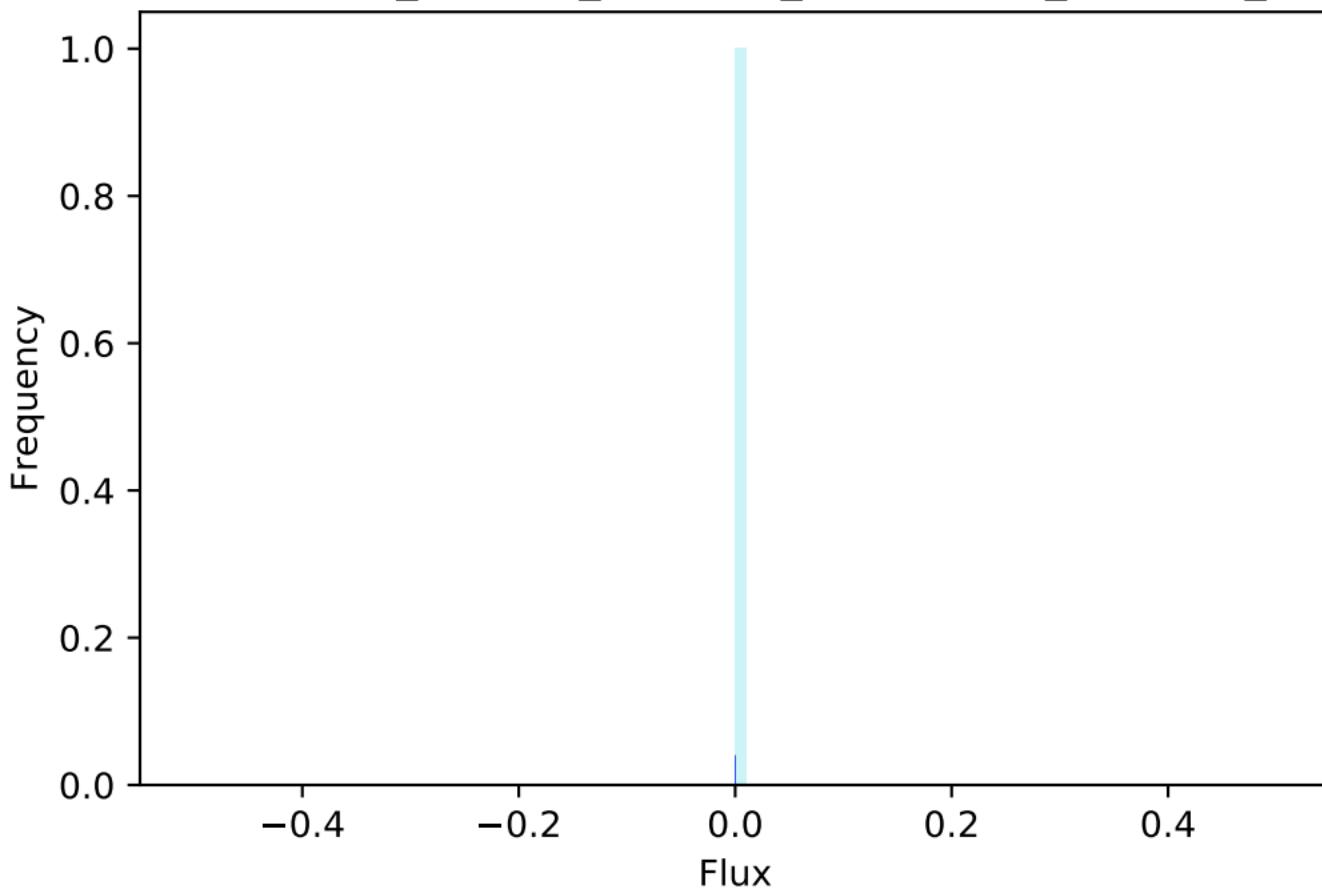
287 : AICAR\_h + F\_DASH\_THF\_h --> FAICAR\_h + 2.0 H\_h + THF\_h

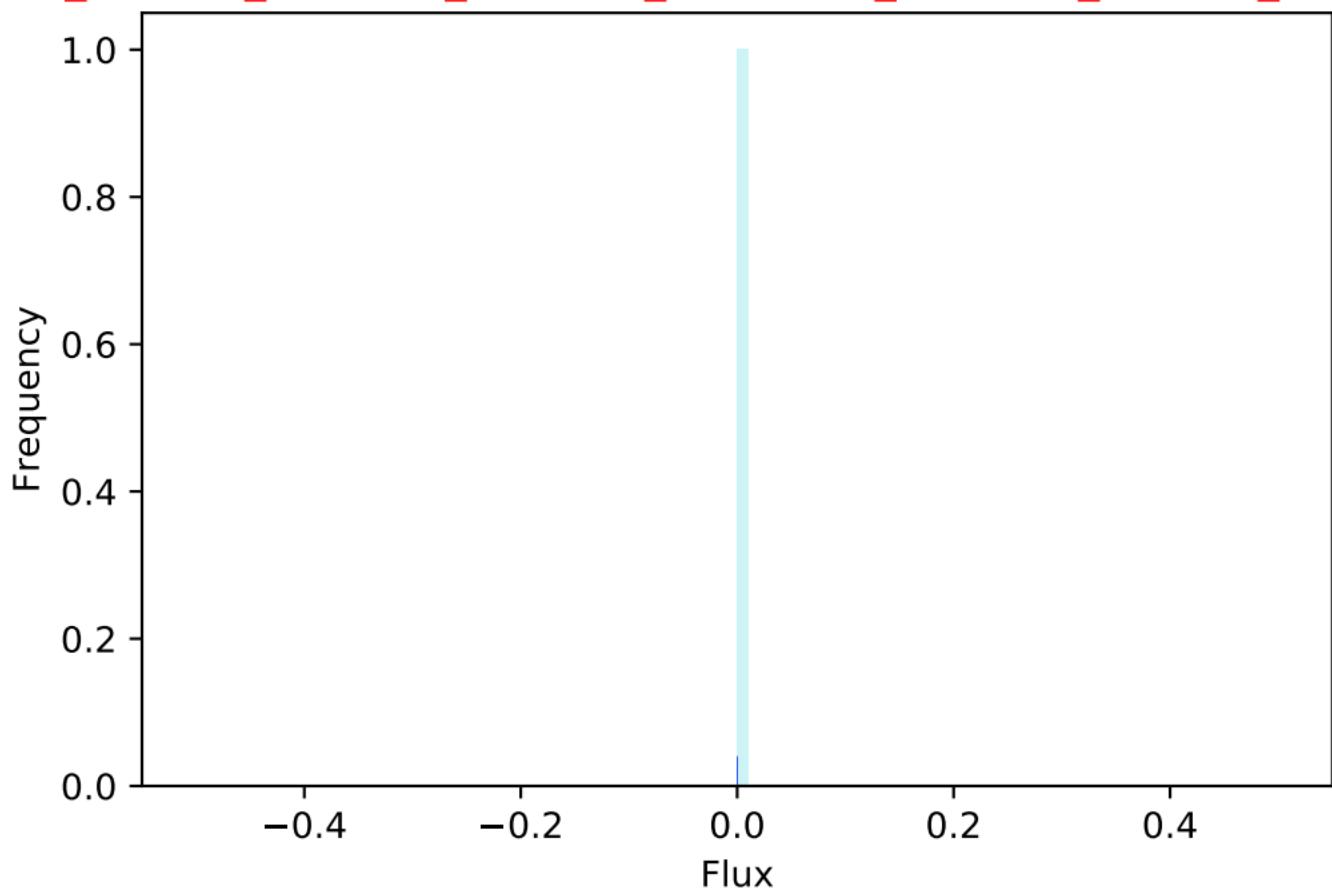


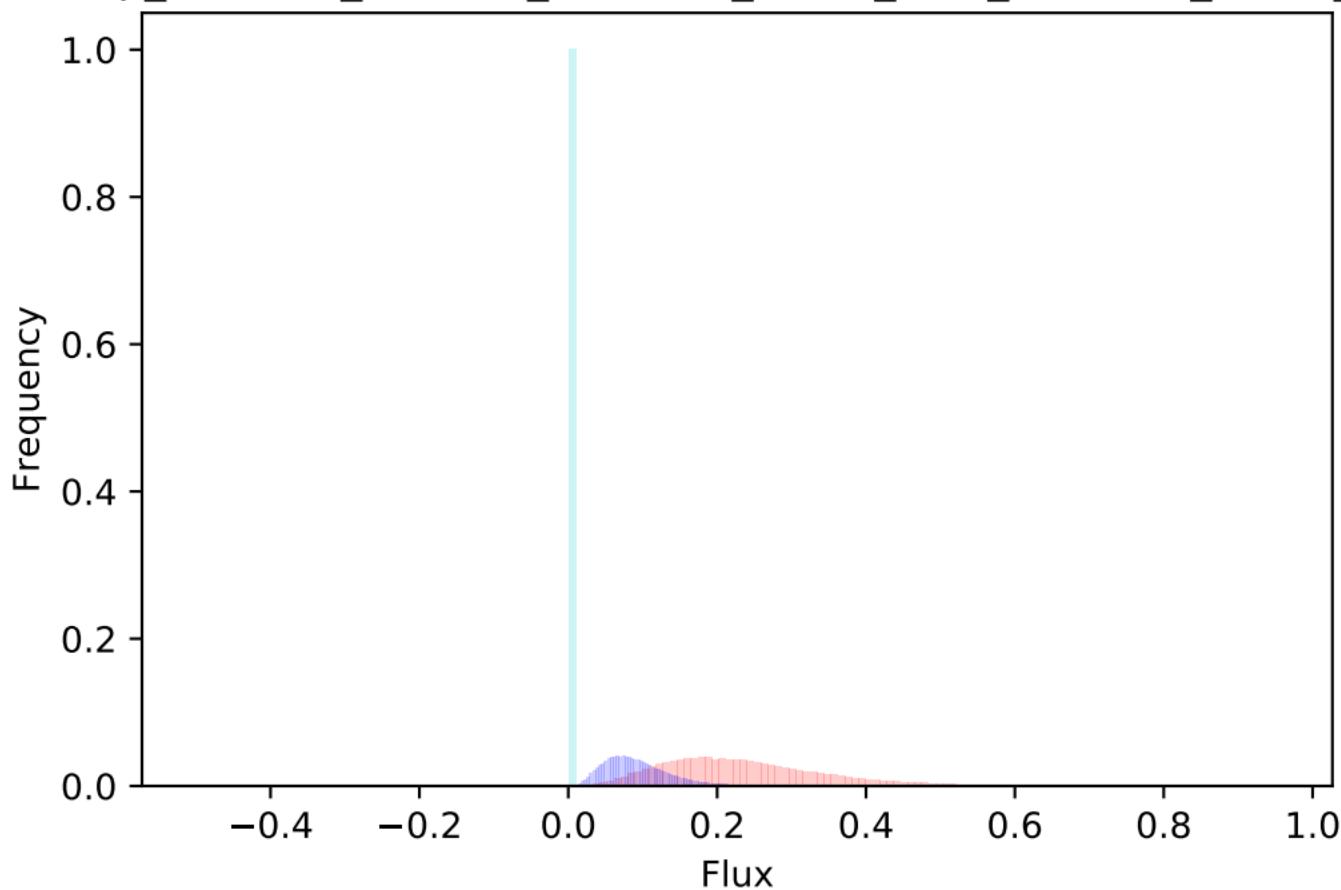
288 : FAICAR\_h --> H2O\_h + IMP\_h



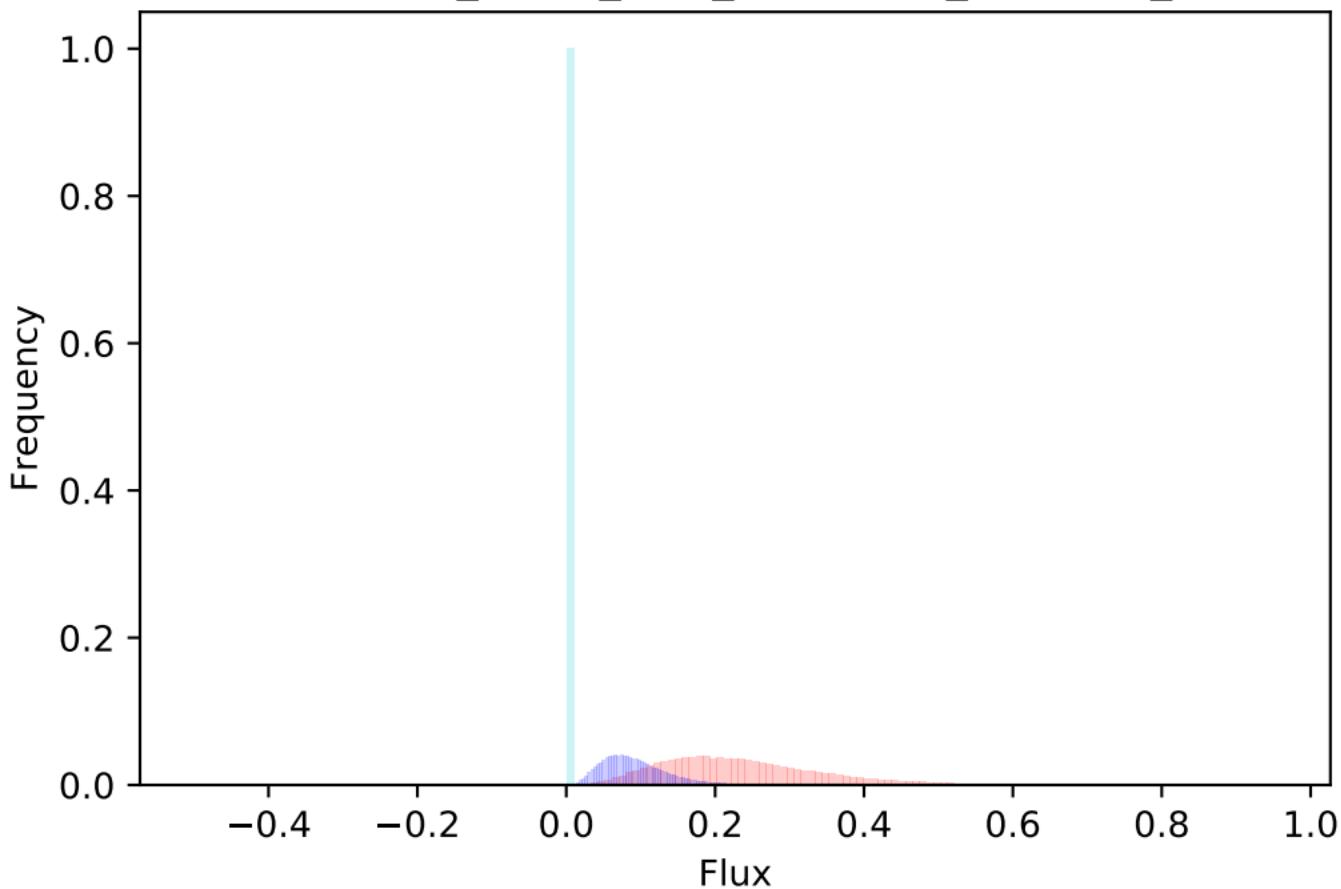




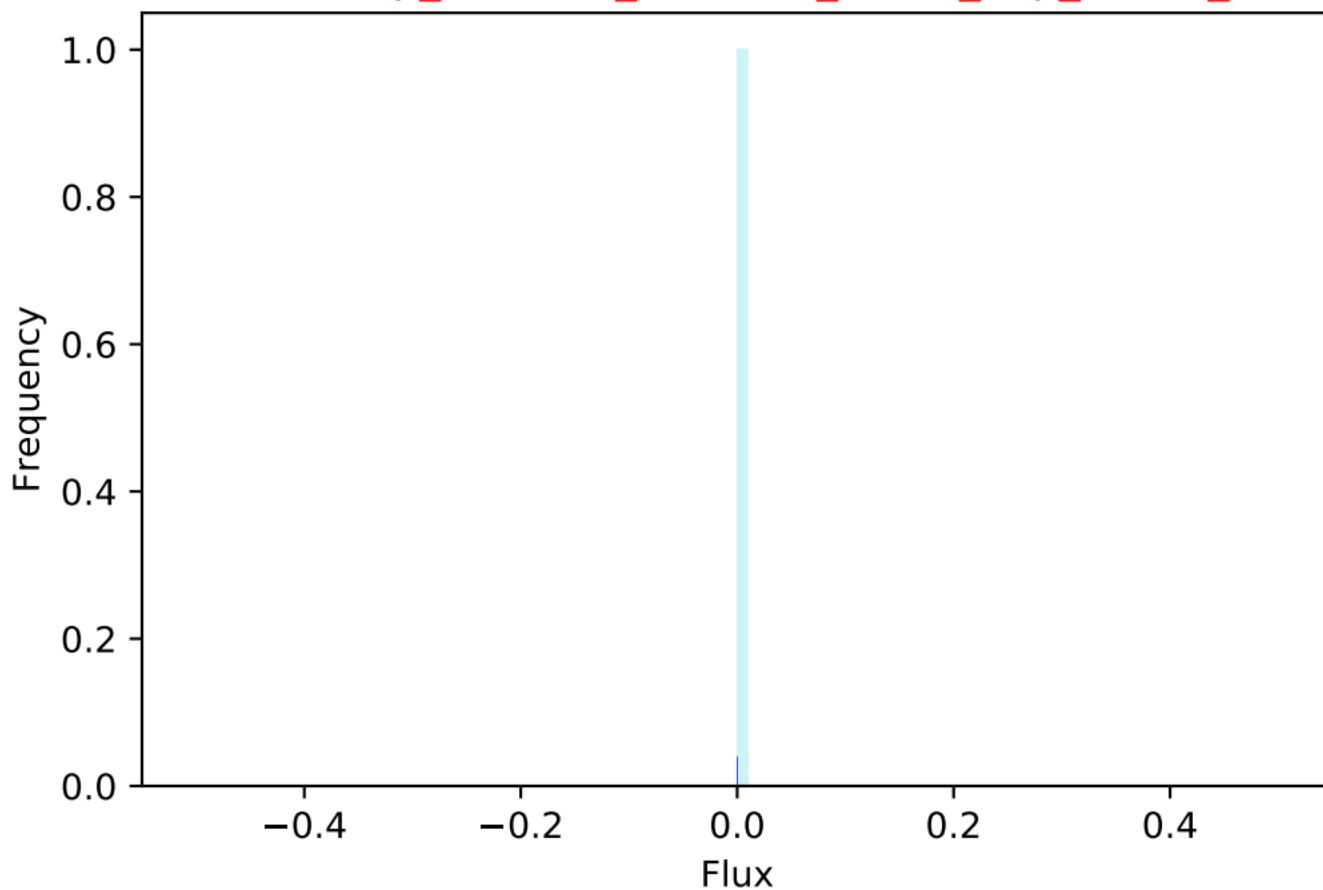




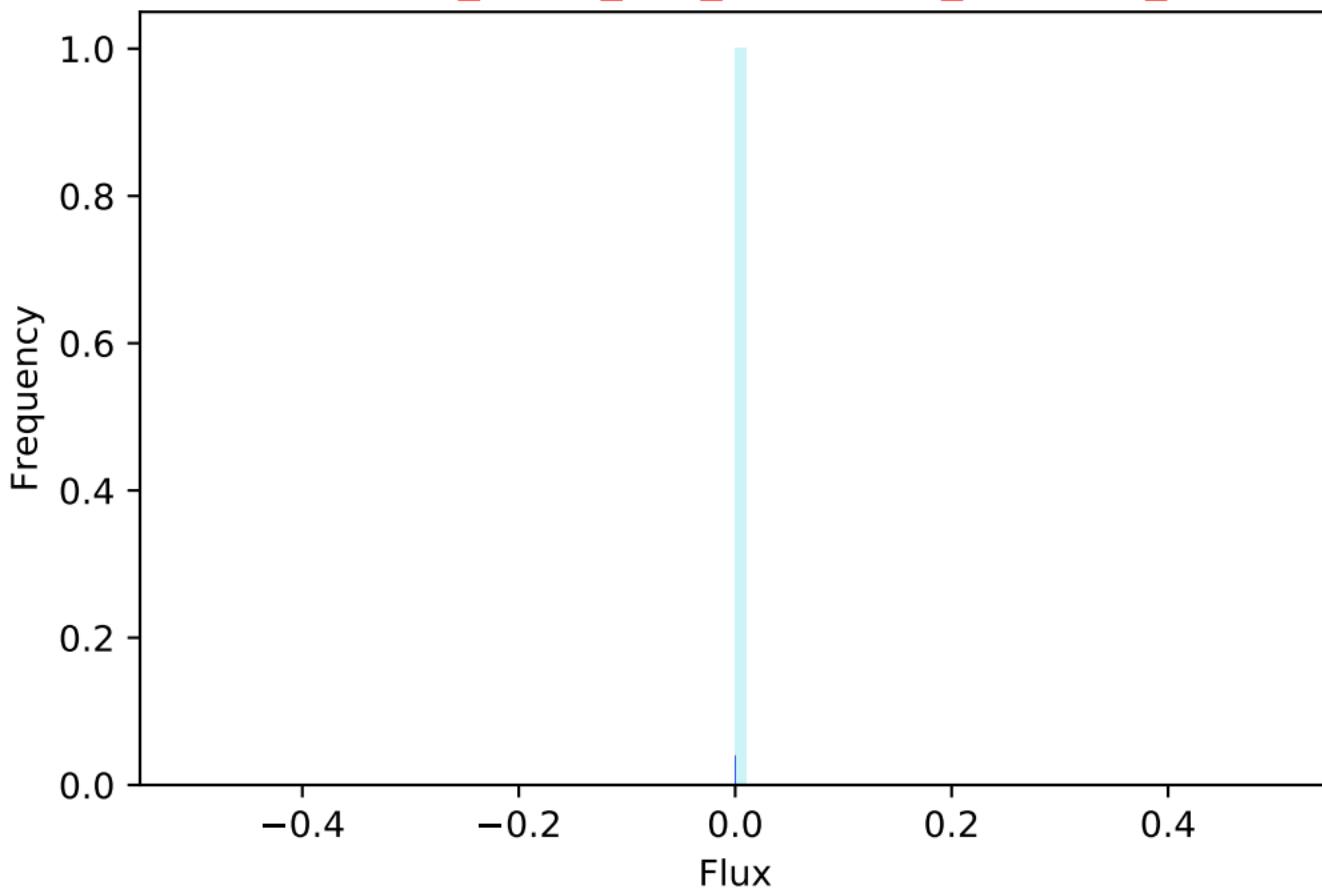
293 : DC\_DASH\_AMP\_h --> AMP\_h + Fum\_h

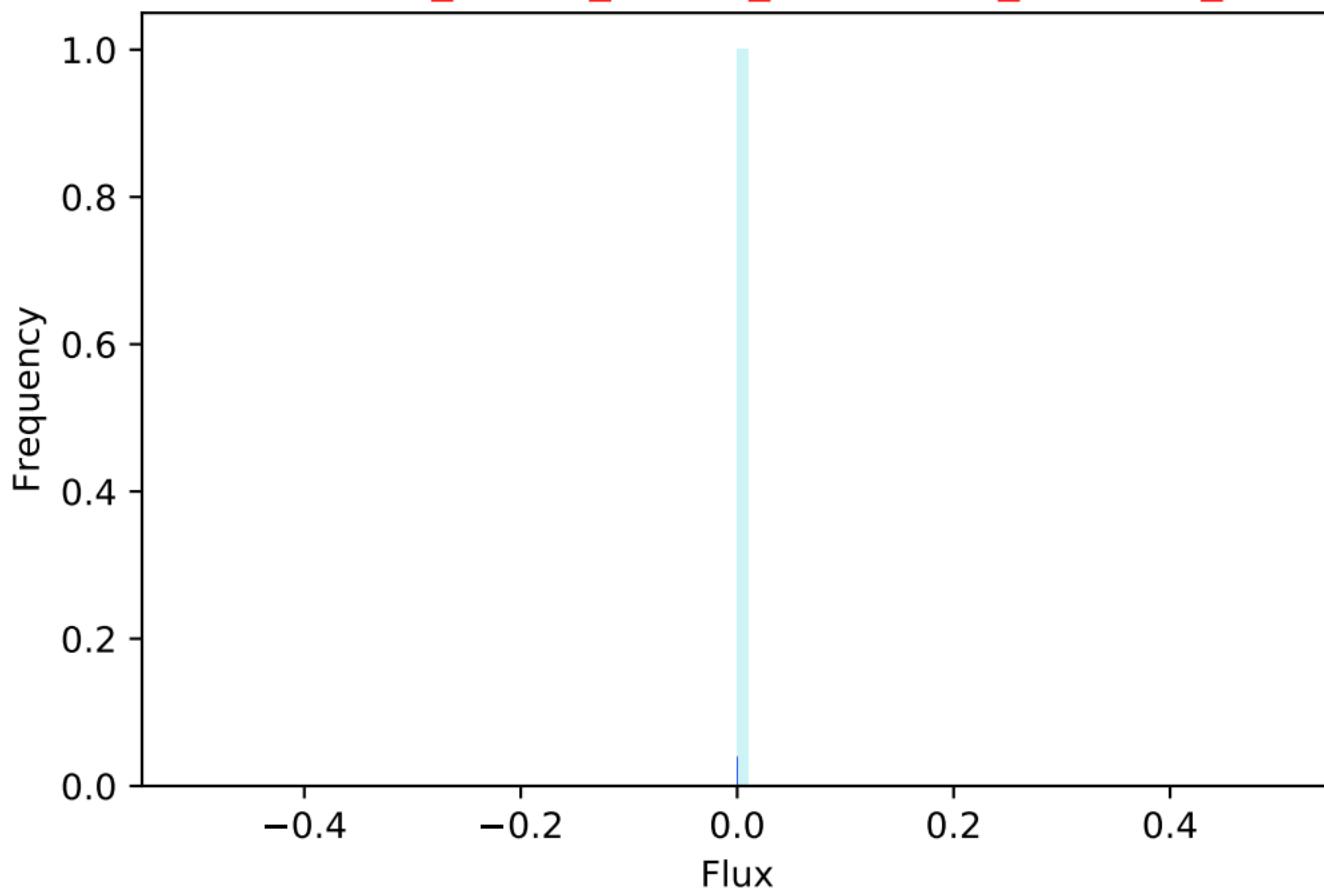


294 : Asp\_h + CBP\_h --> CB\_DASH\_Asp\_h + Pi\_h

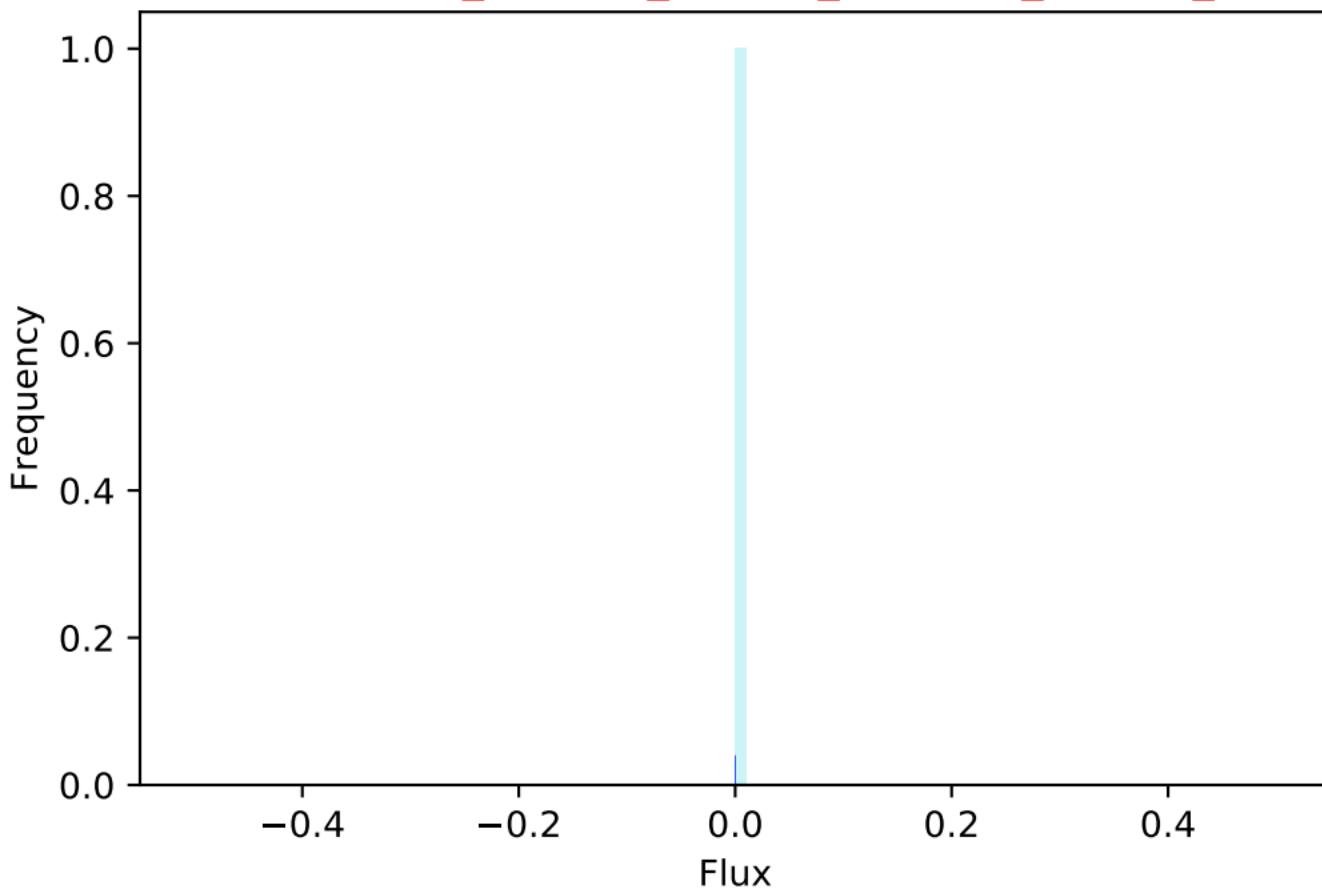


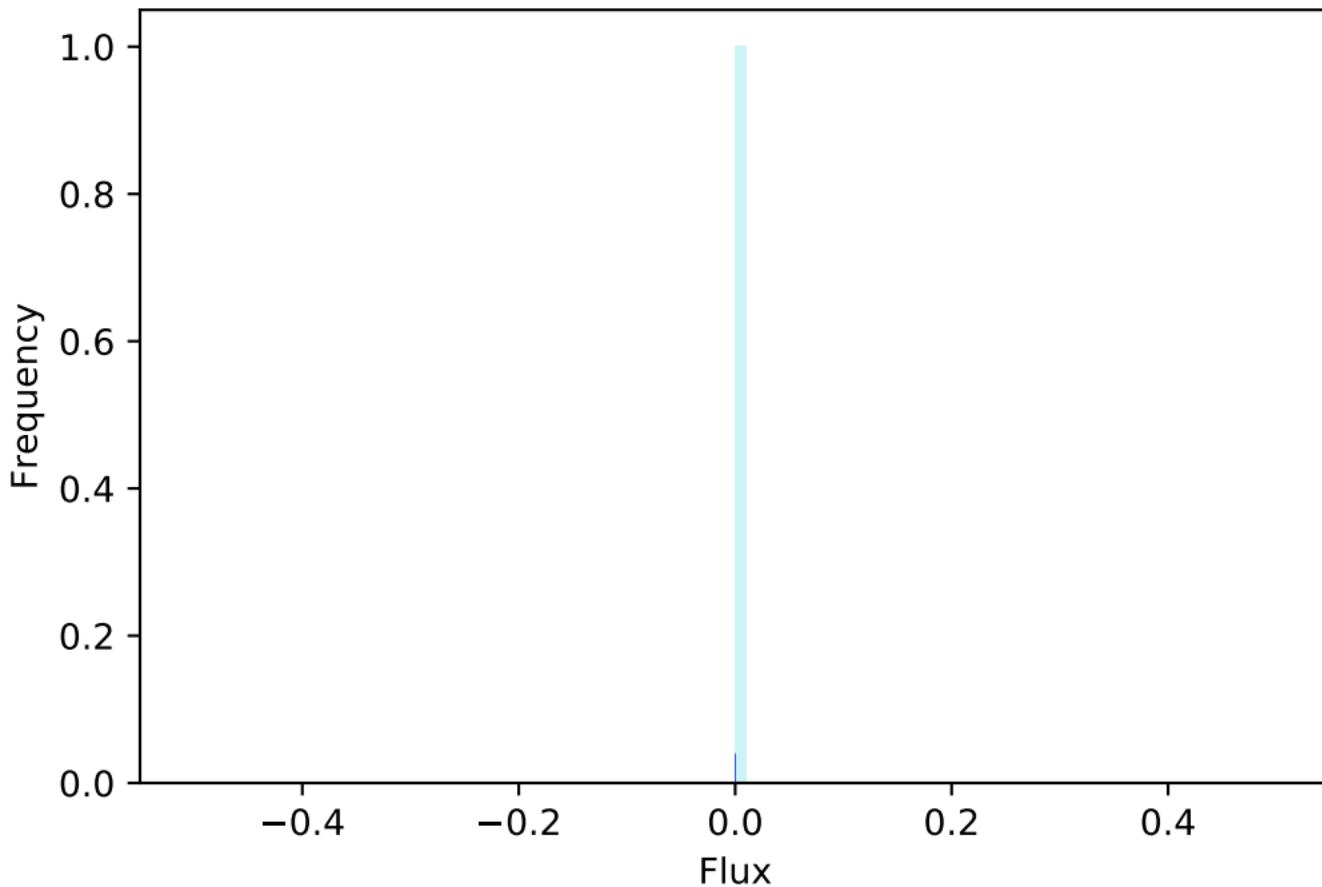
295 : CB\_DASH\_Asp\_h --> DHO\_h + H2O\_h

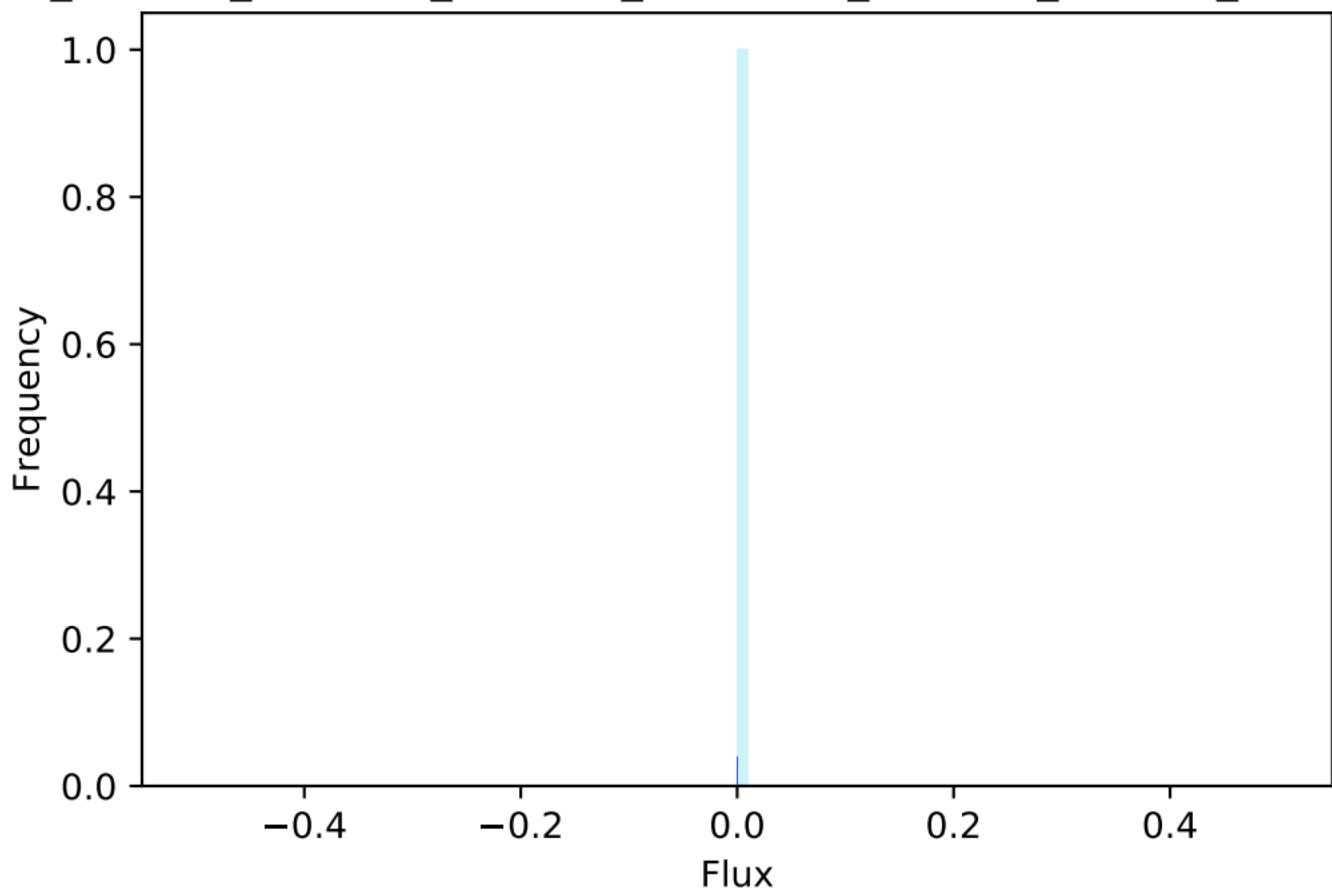
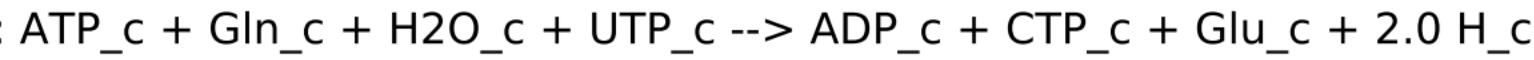


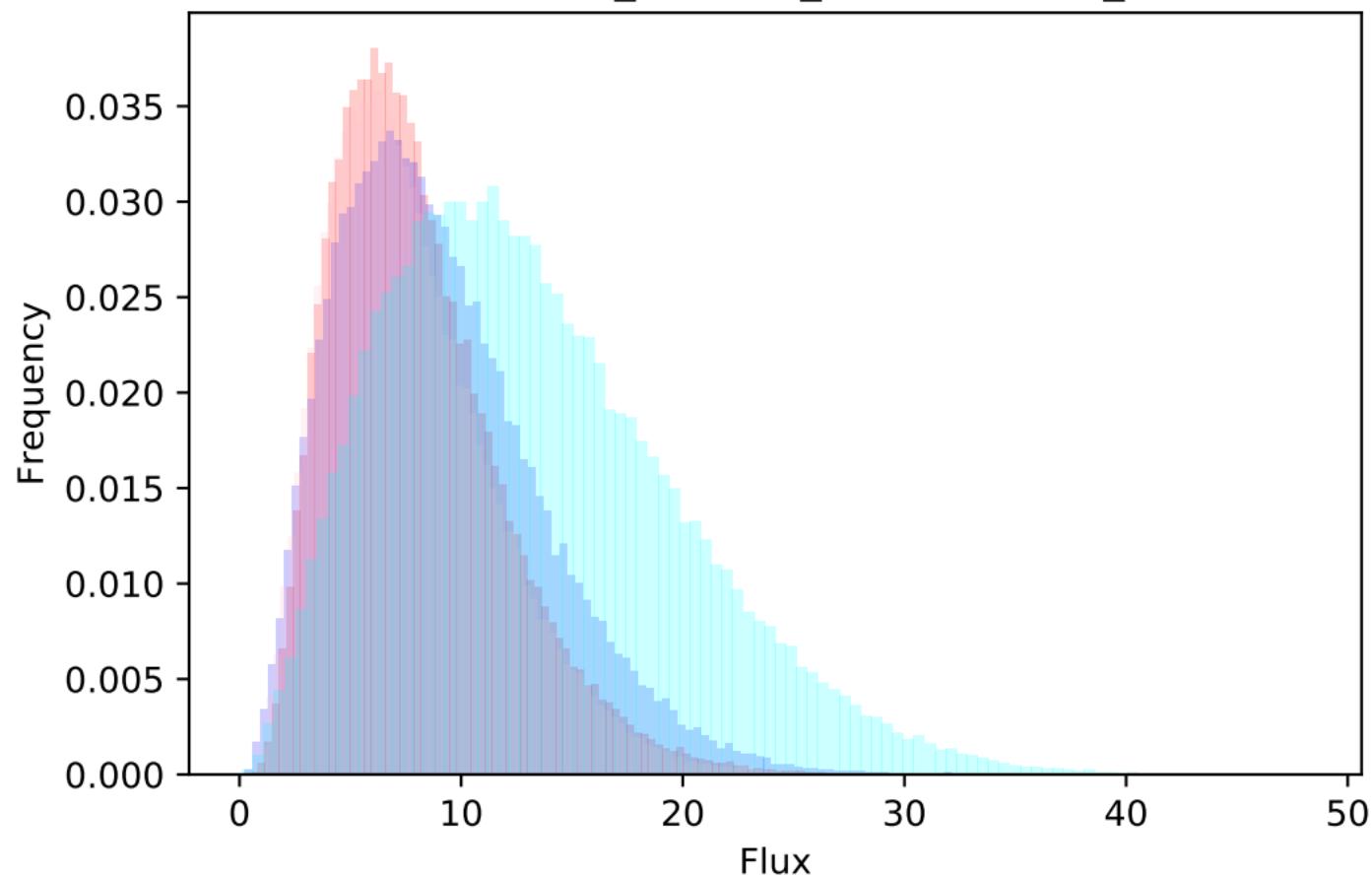


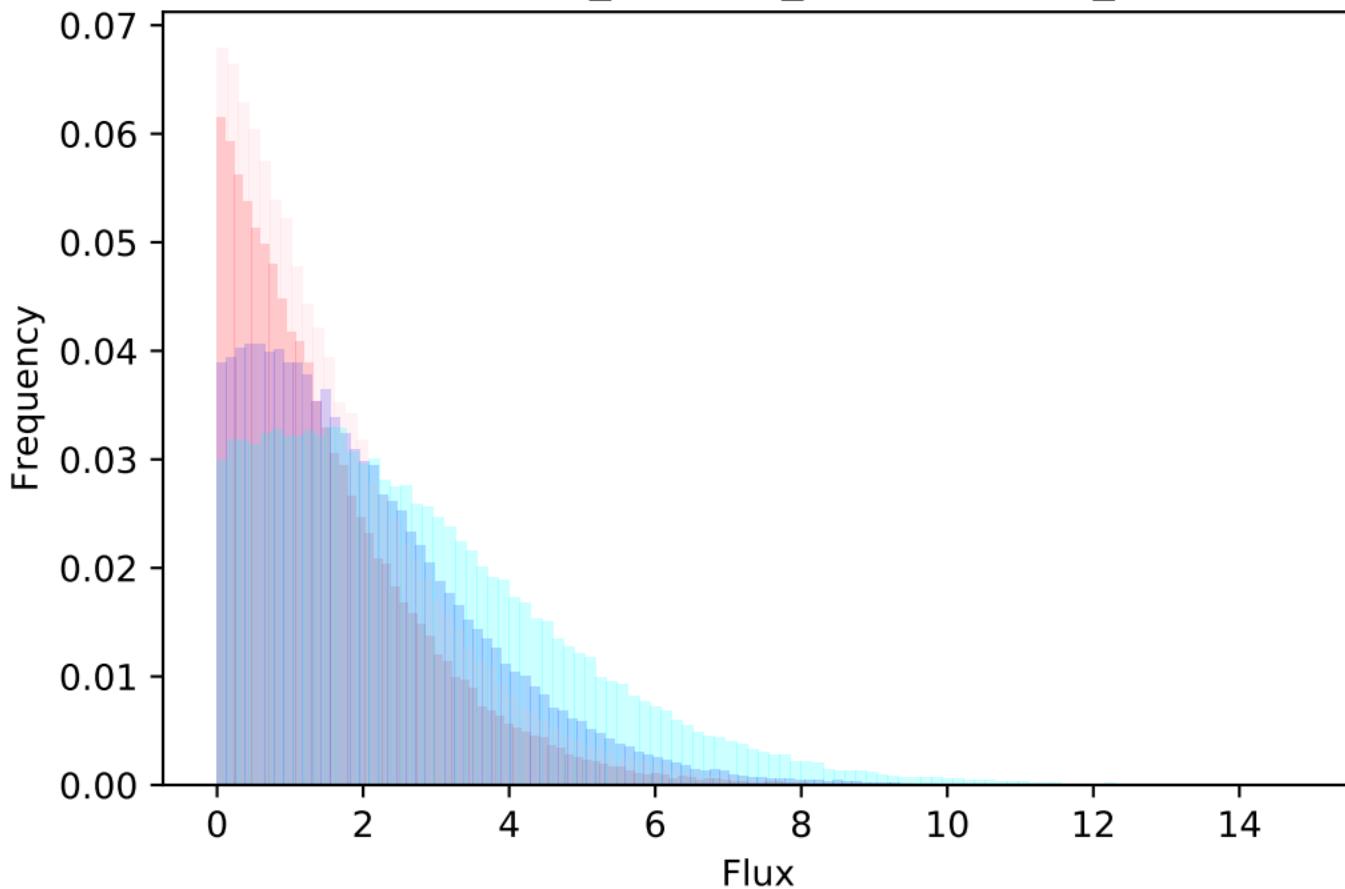
297 : PRPP\_c + orO\_c --> H\_c + OMP\_c + PPi\_c

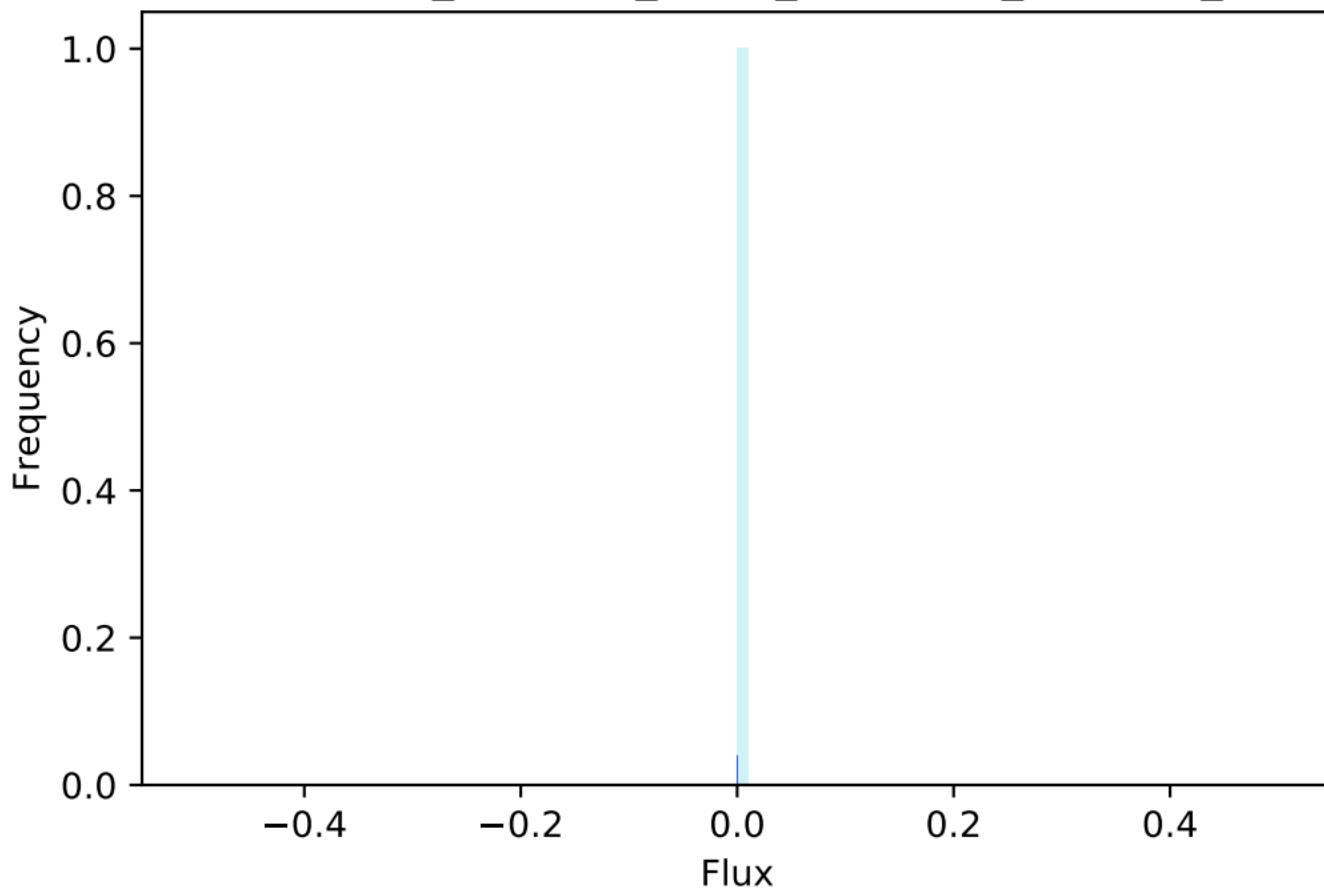
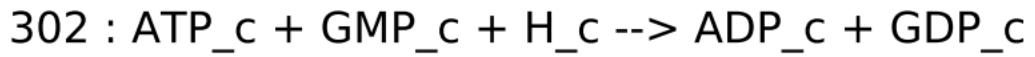


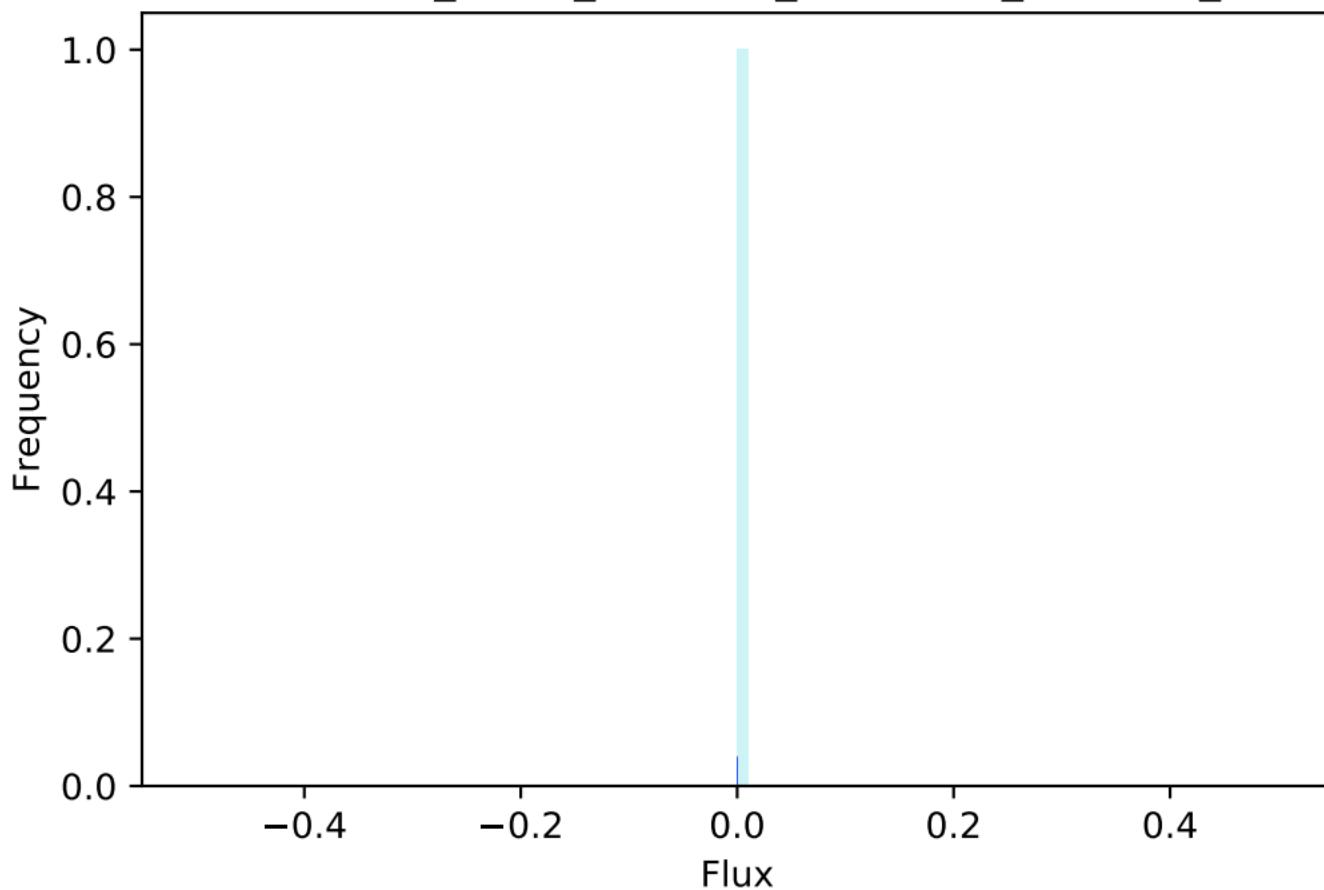


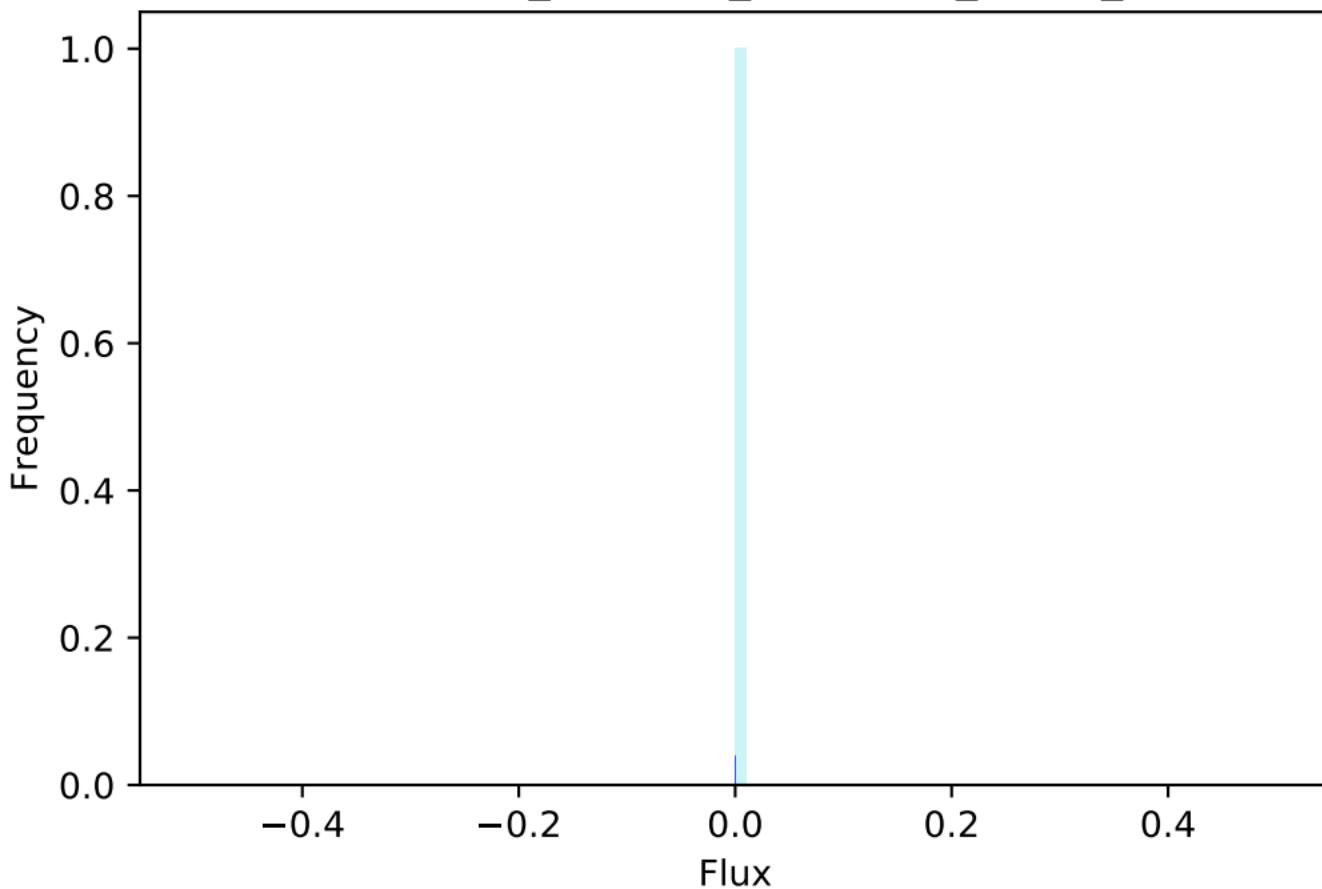


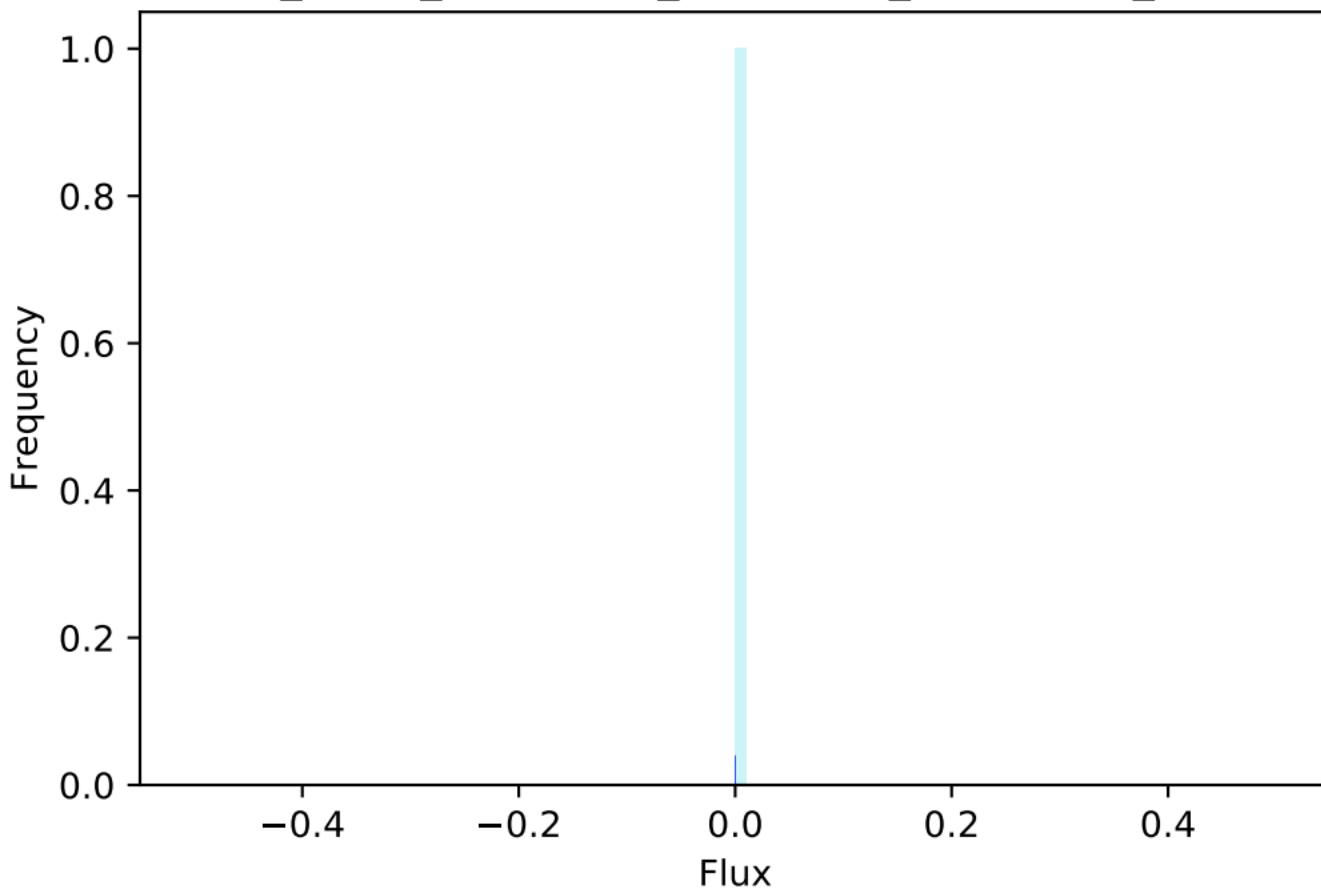
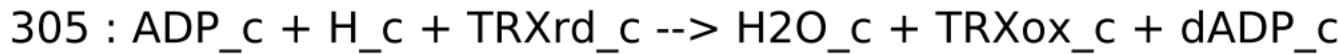


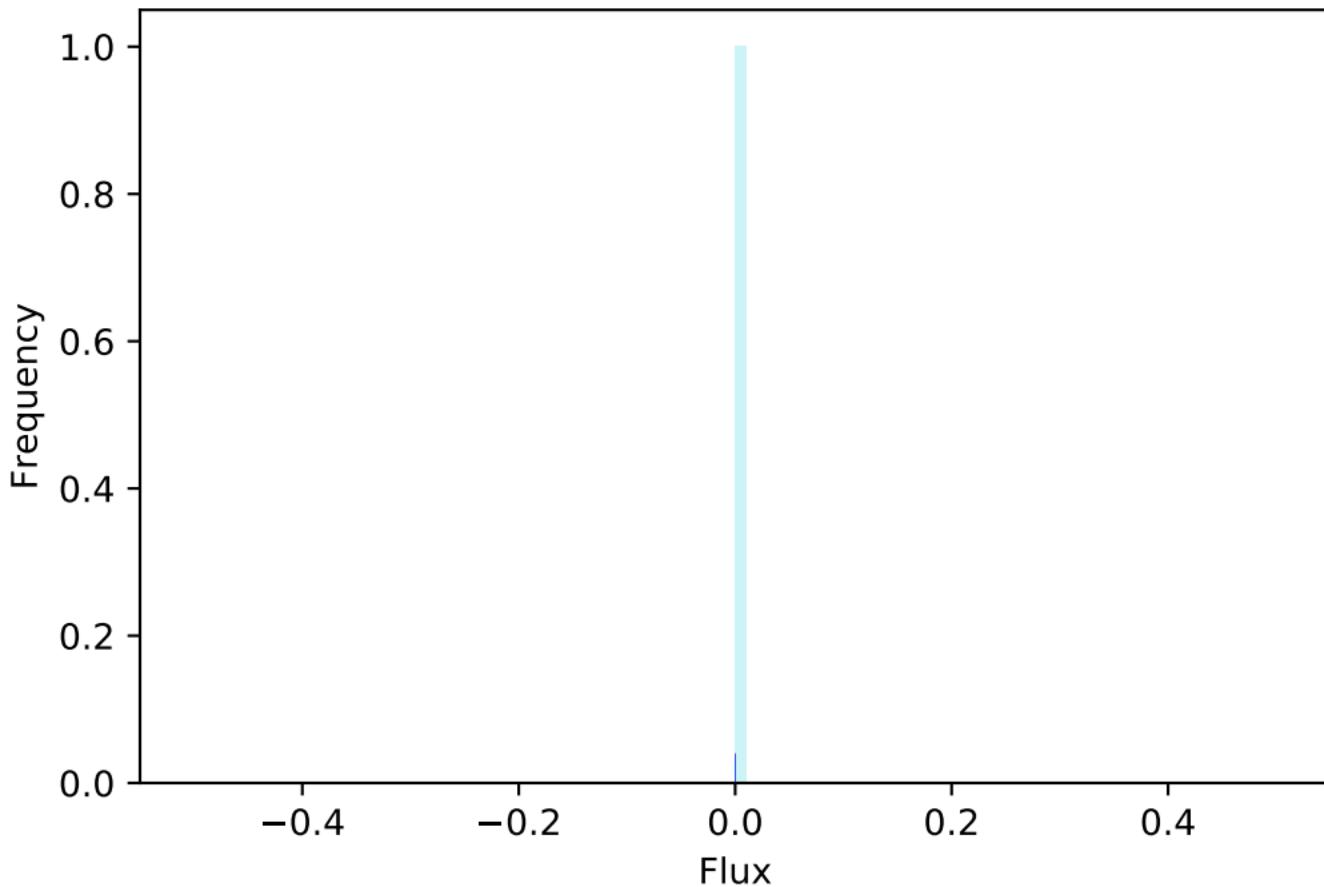
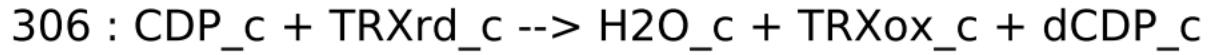


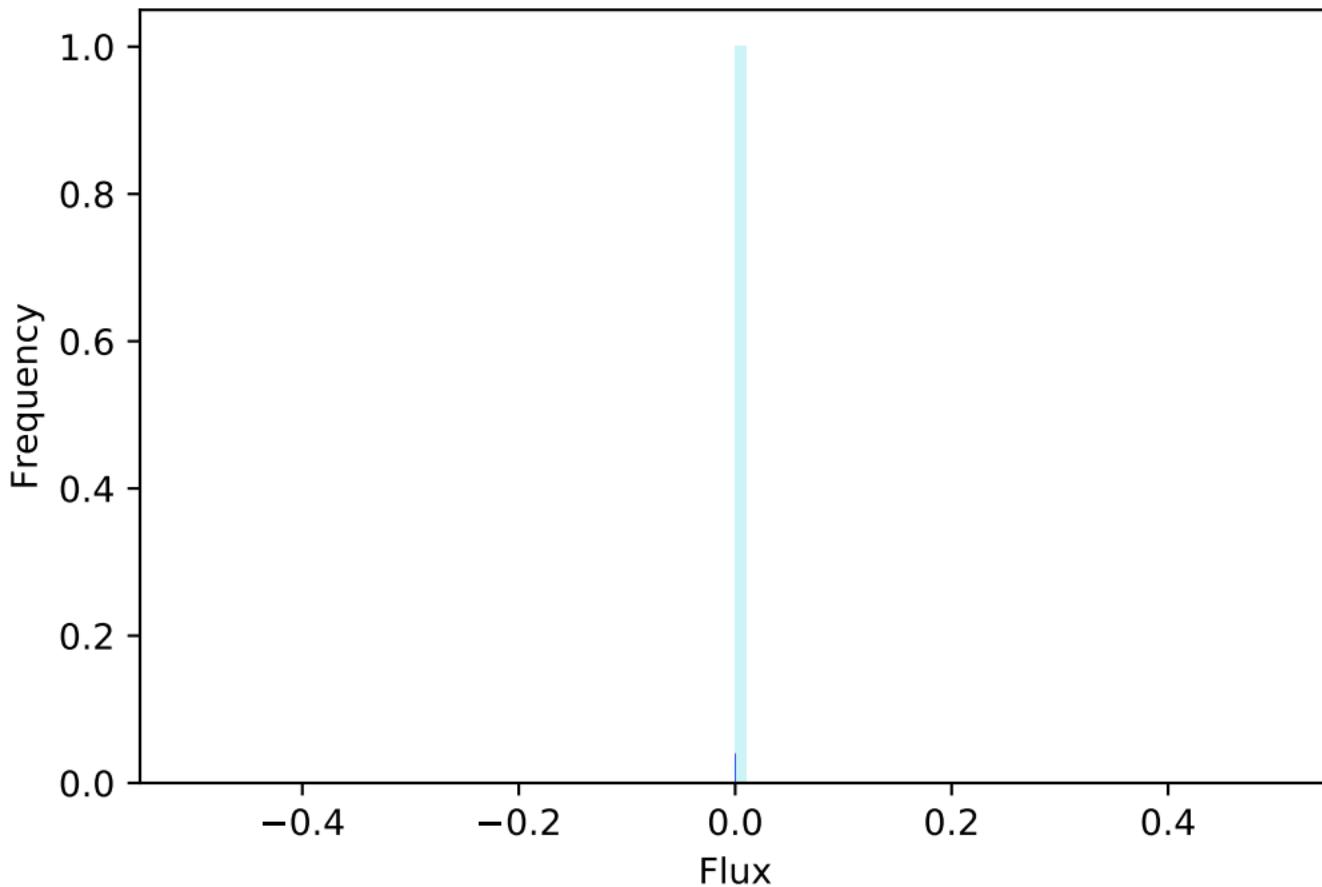


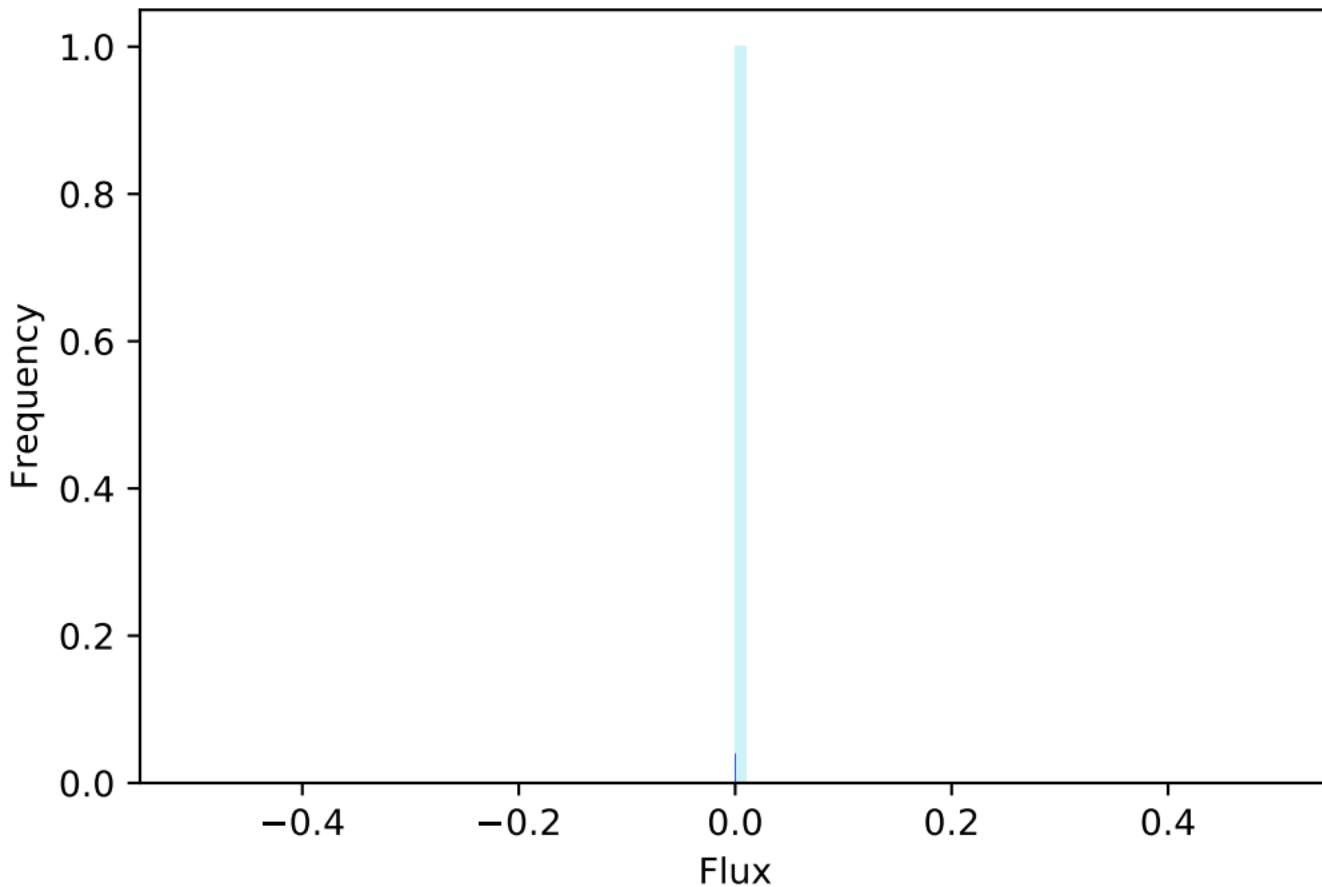




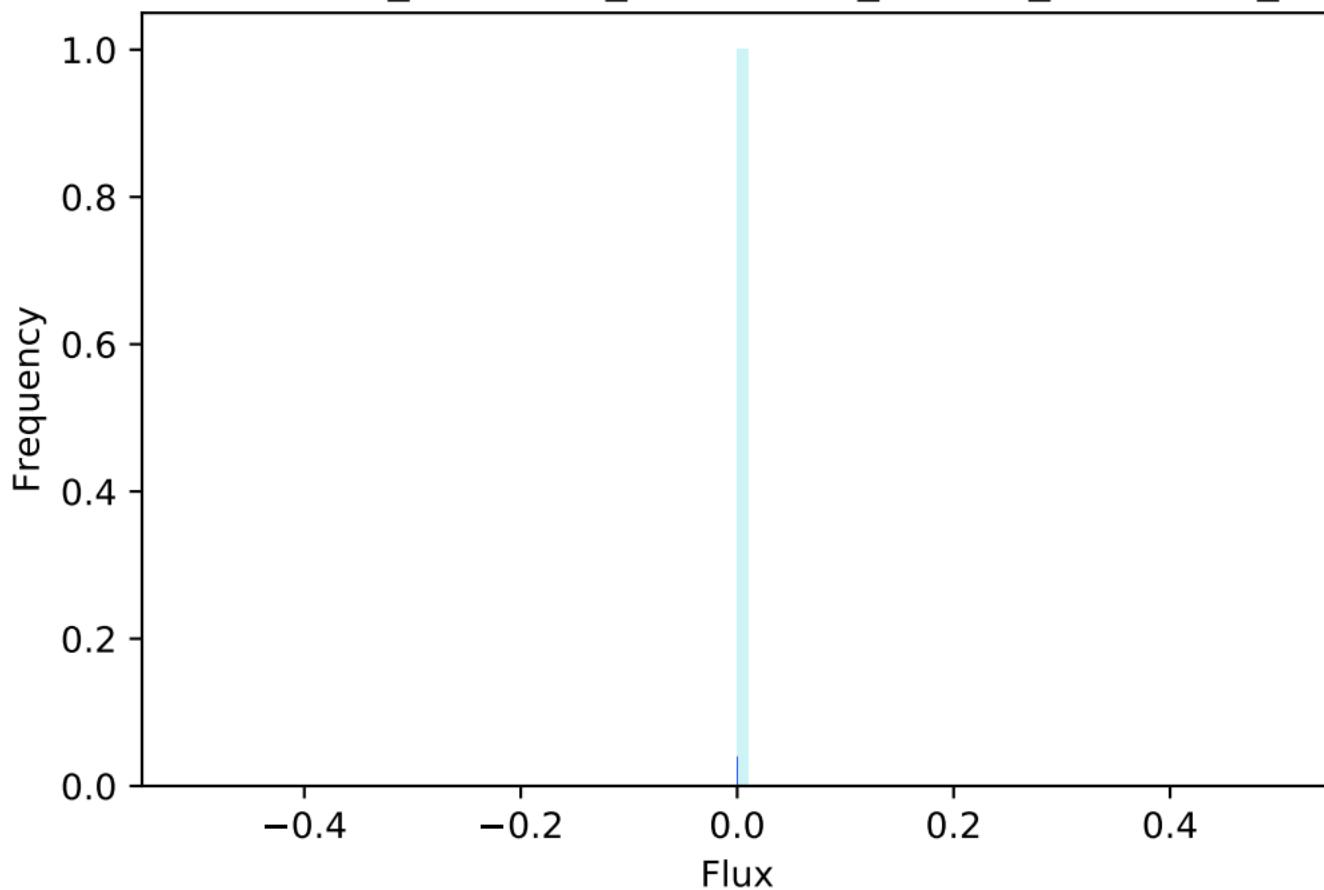




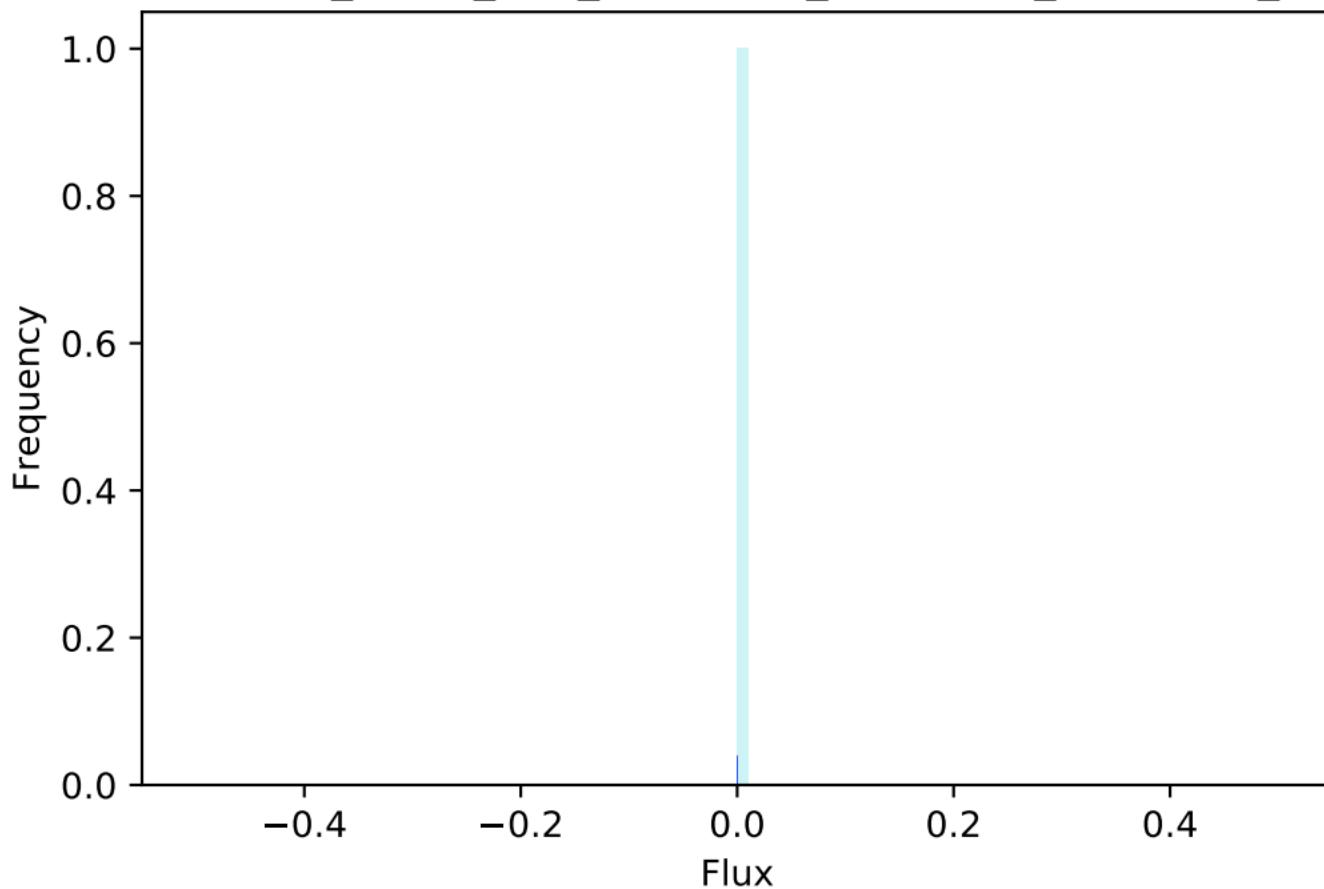


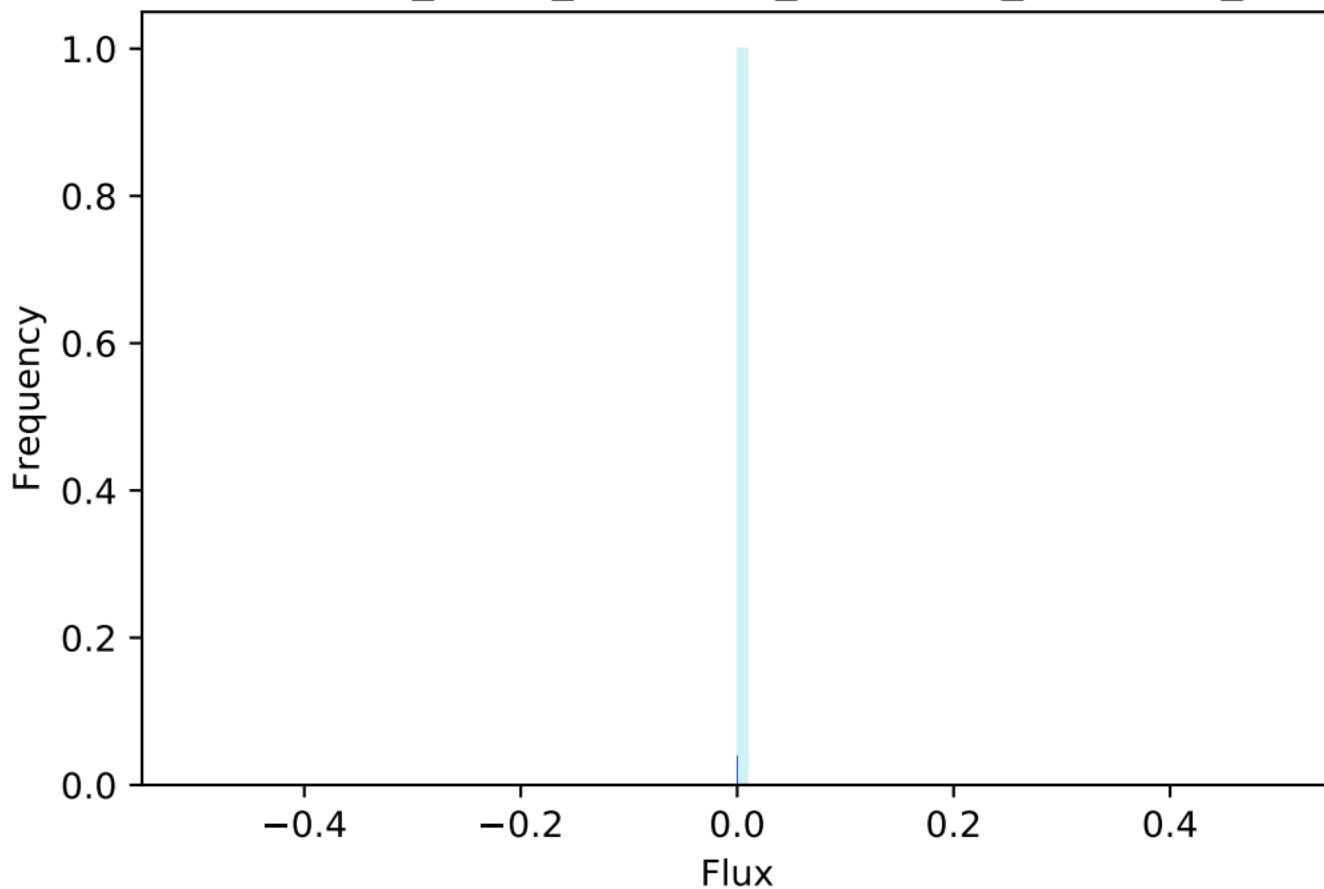


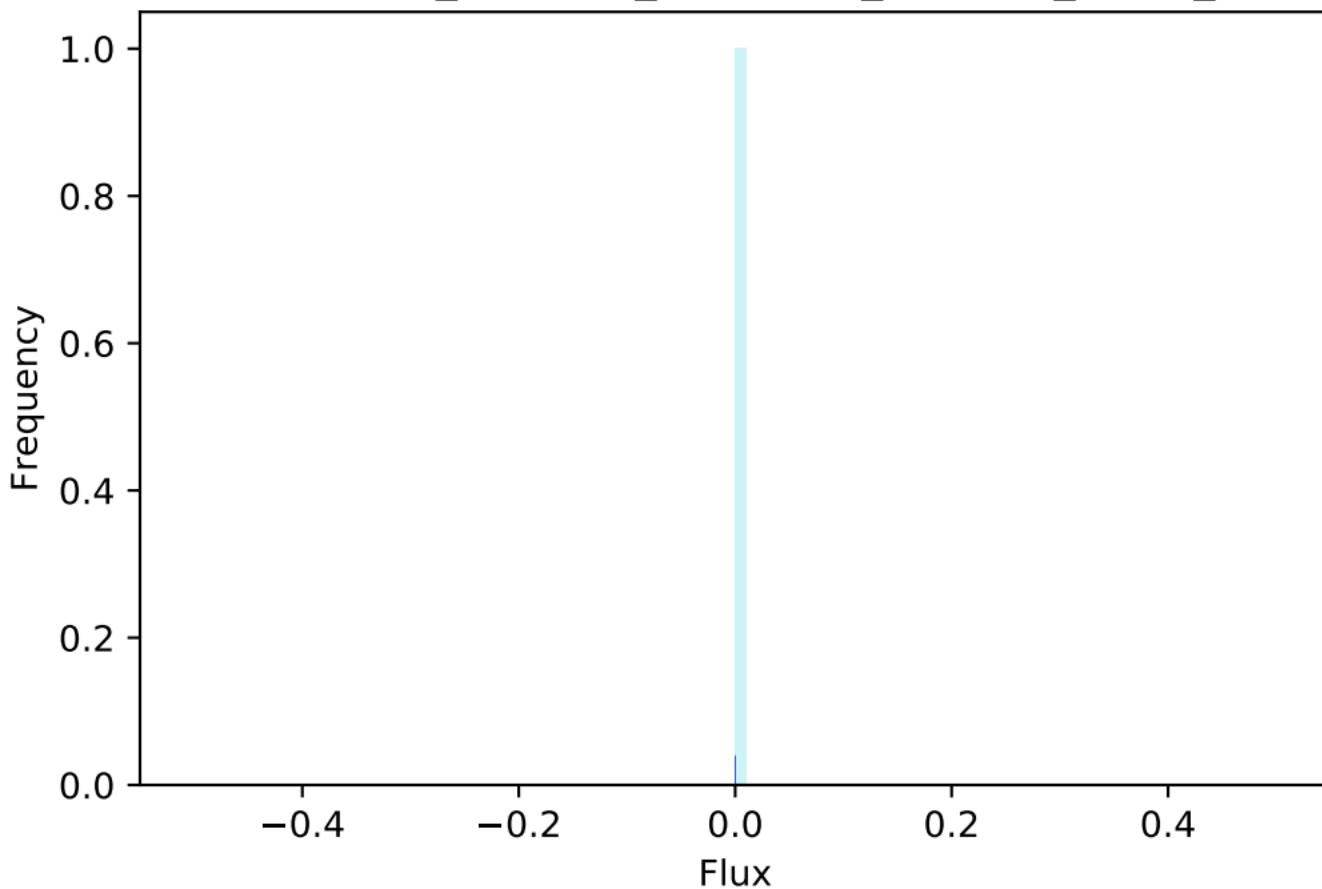
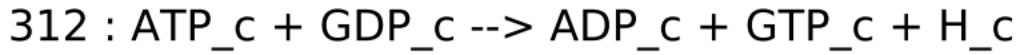
309 : H<sub>2</sub>O\_c + dUTP\_c --> 2.0 H\_c + PPi\_c + dUMP\_c



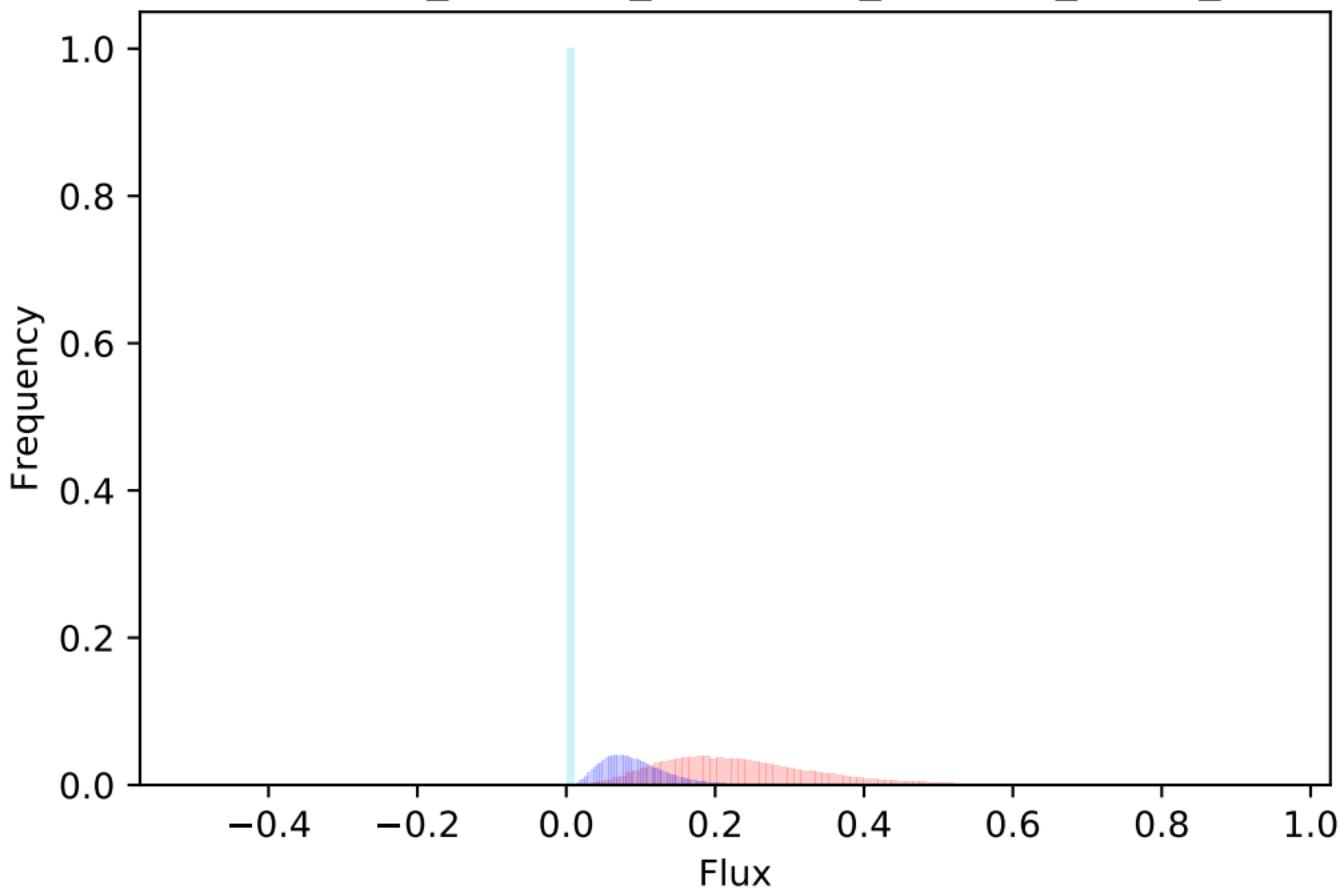
310 : M\_DASH\_THF\_c + dUMP\_c --> DHF\_c + dTMP\_c

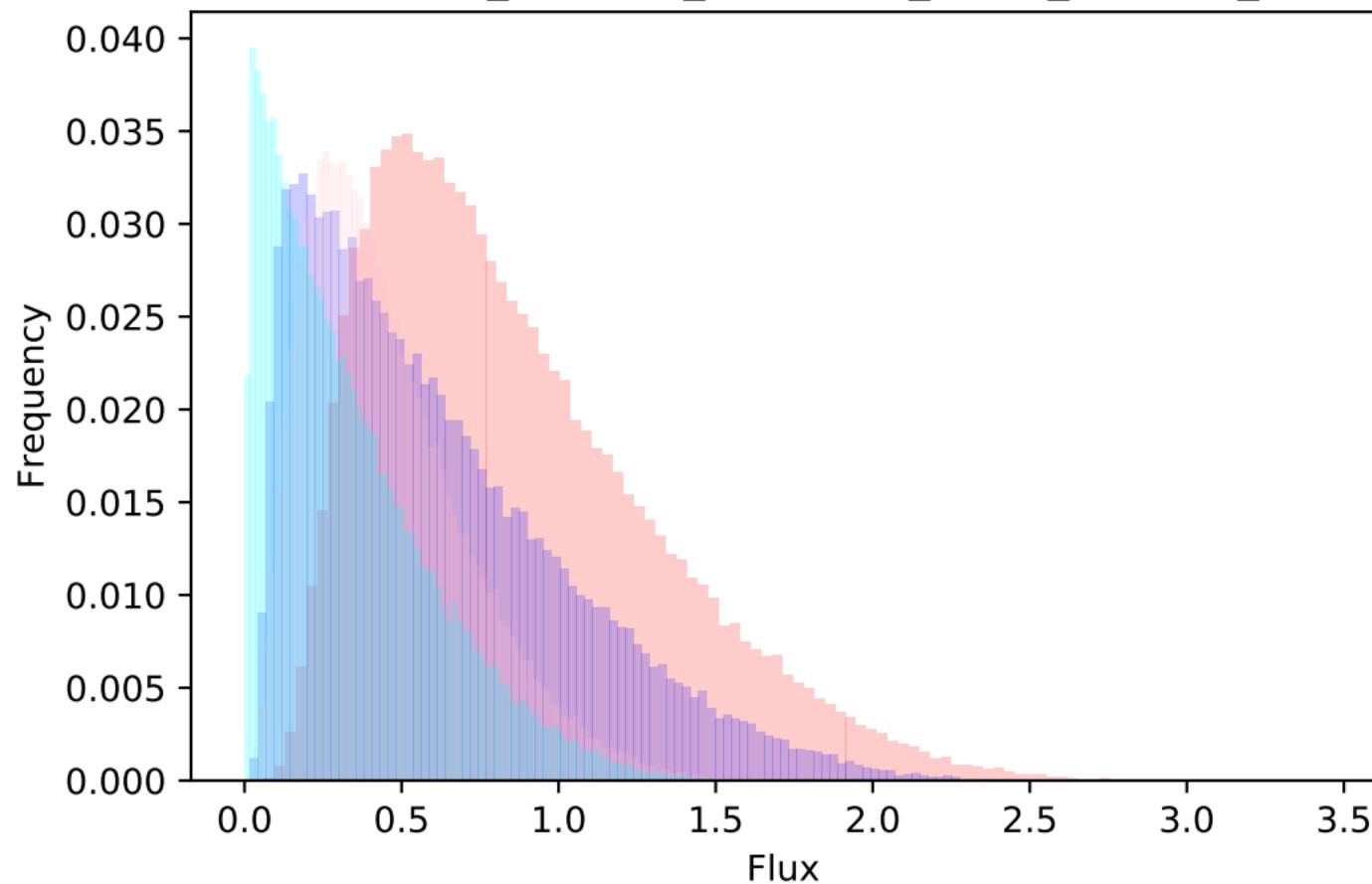
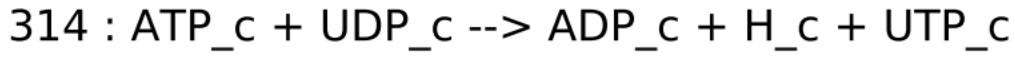


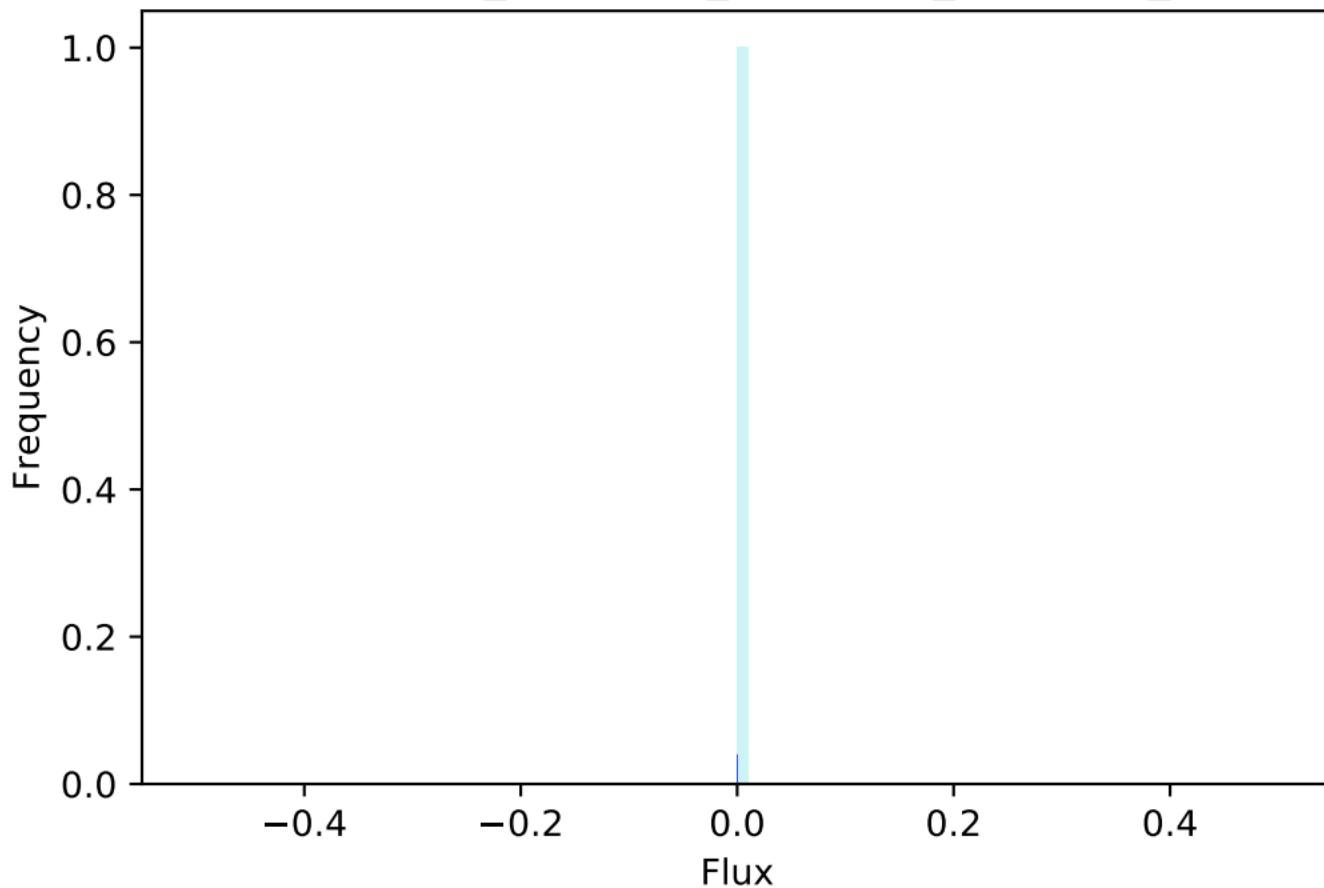
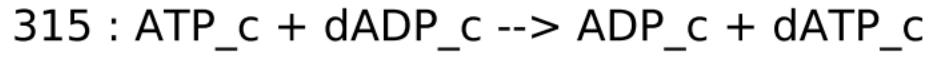


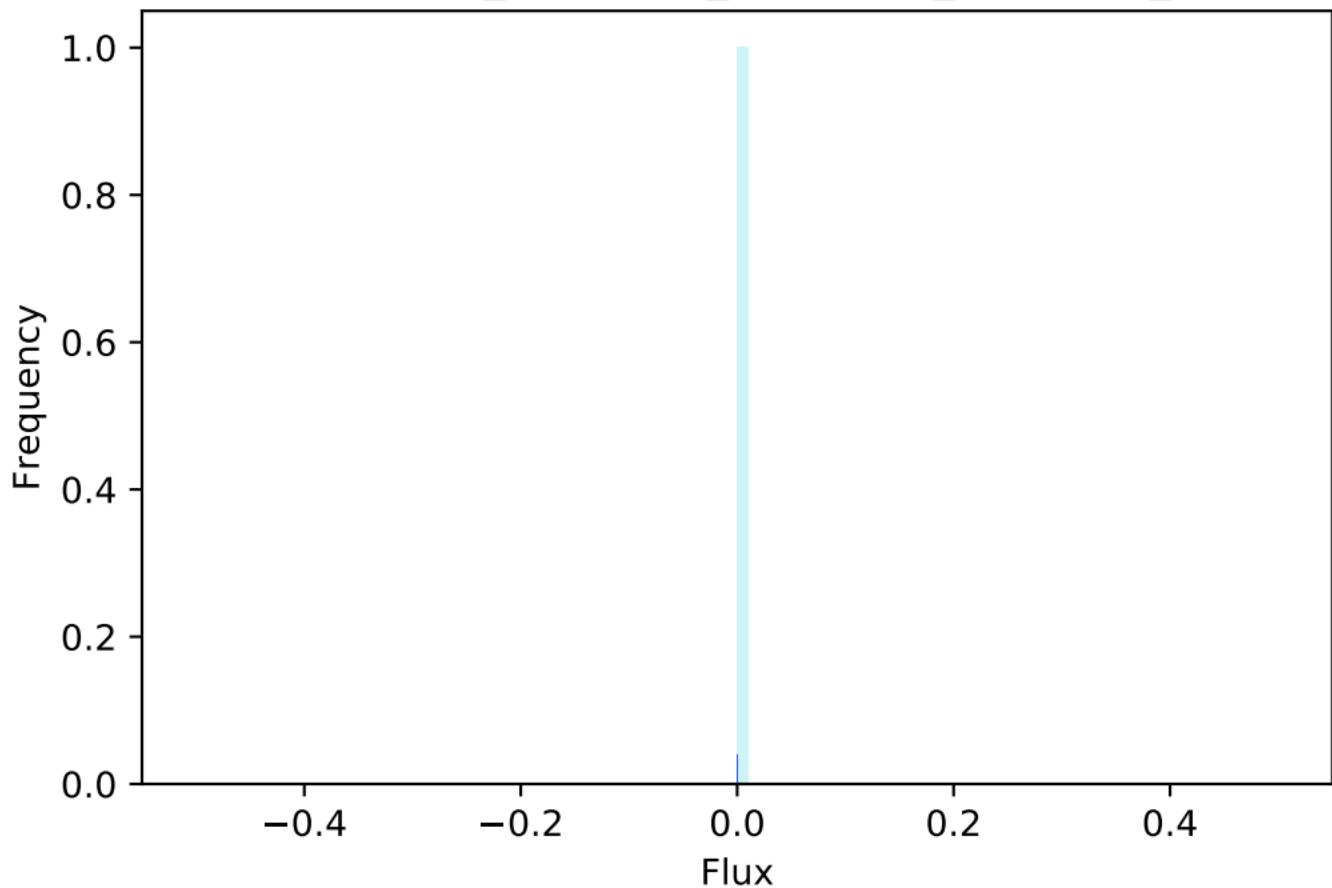
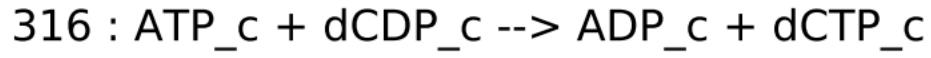


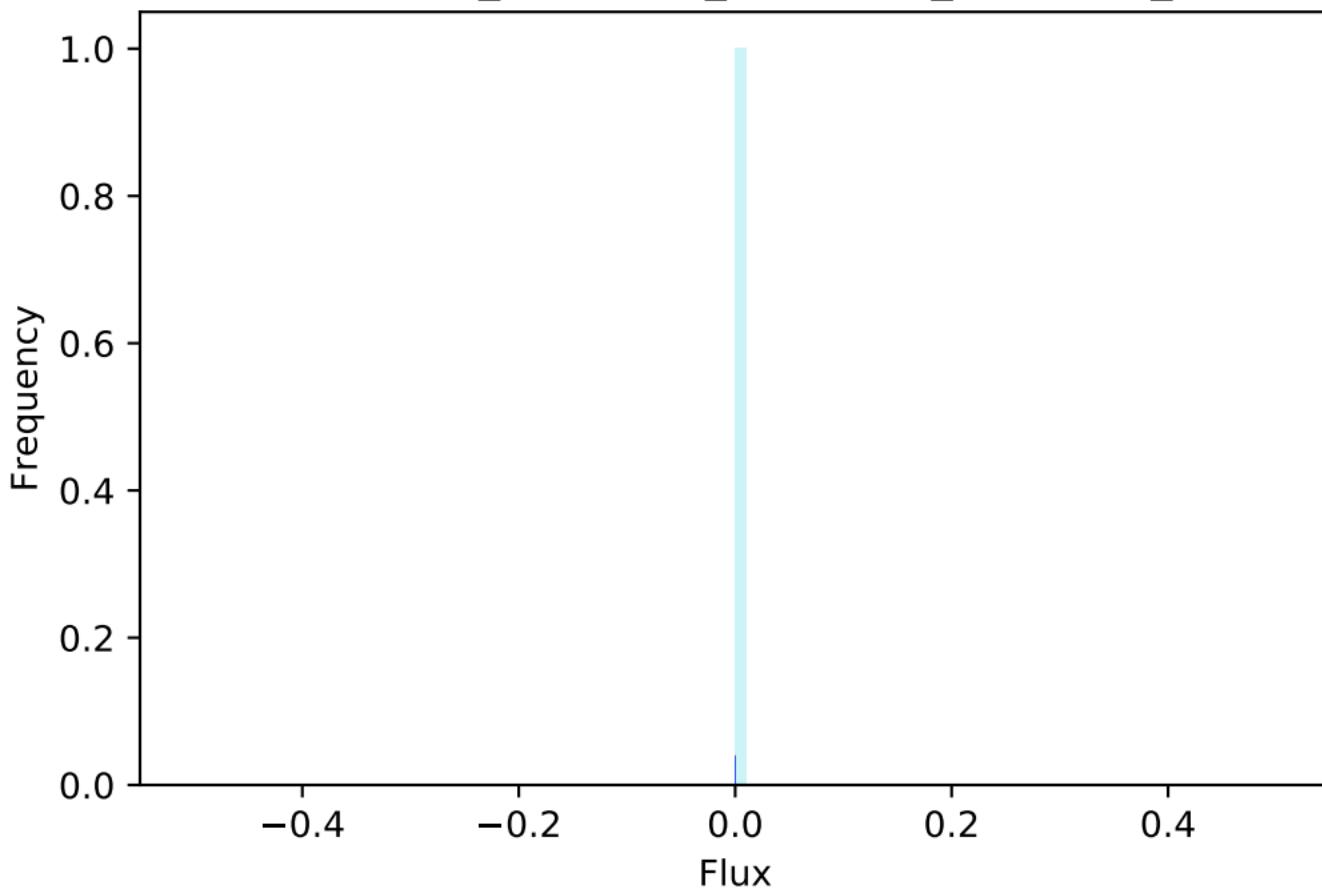
313 : ATP\_h + GDP\_h --> ADP\_h + GTP\_h + H\_h

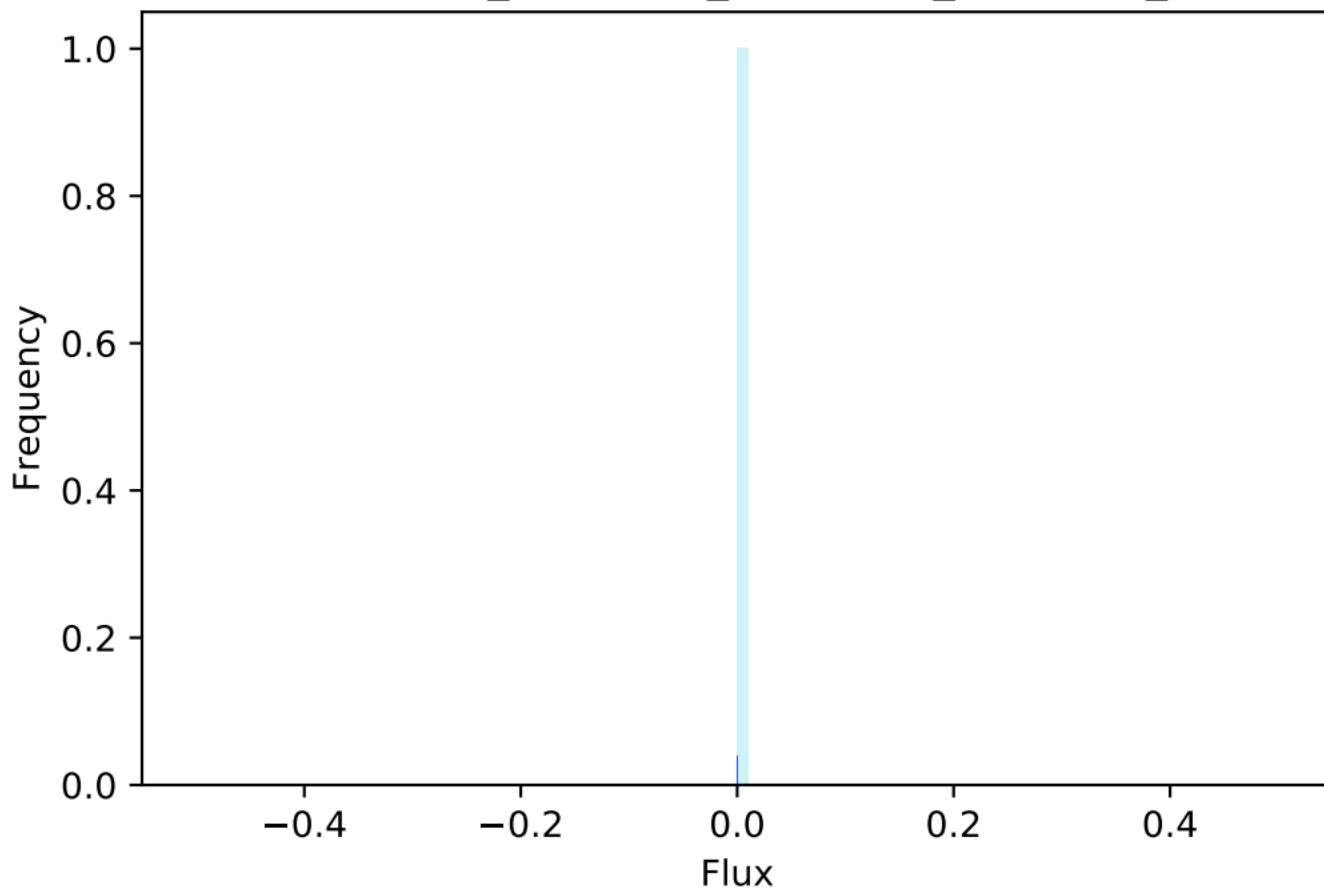


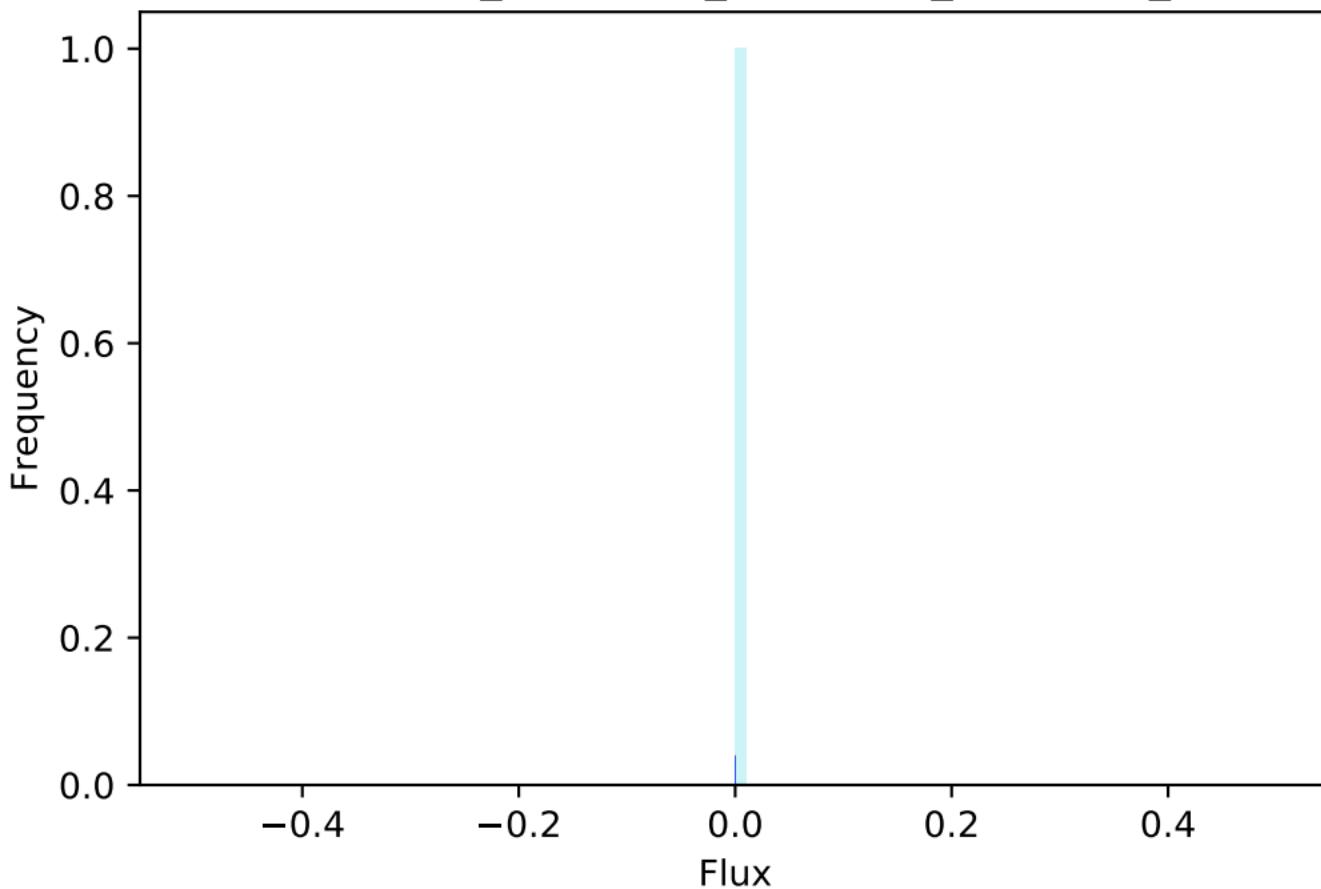




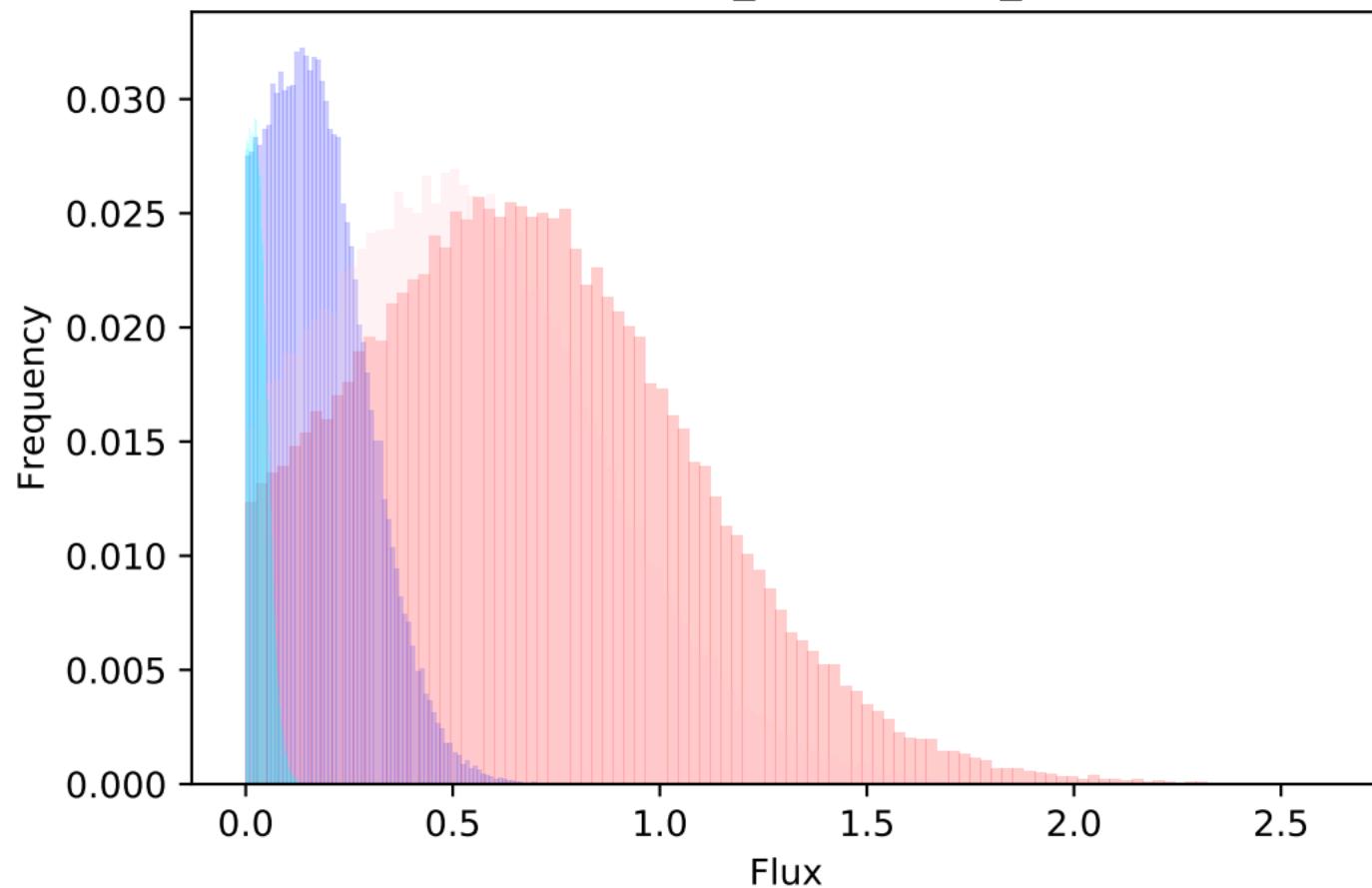




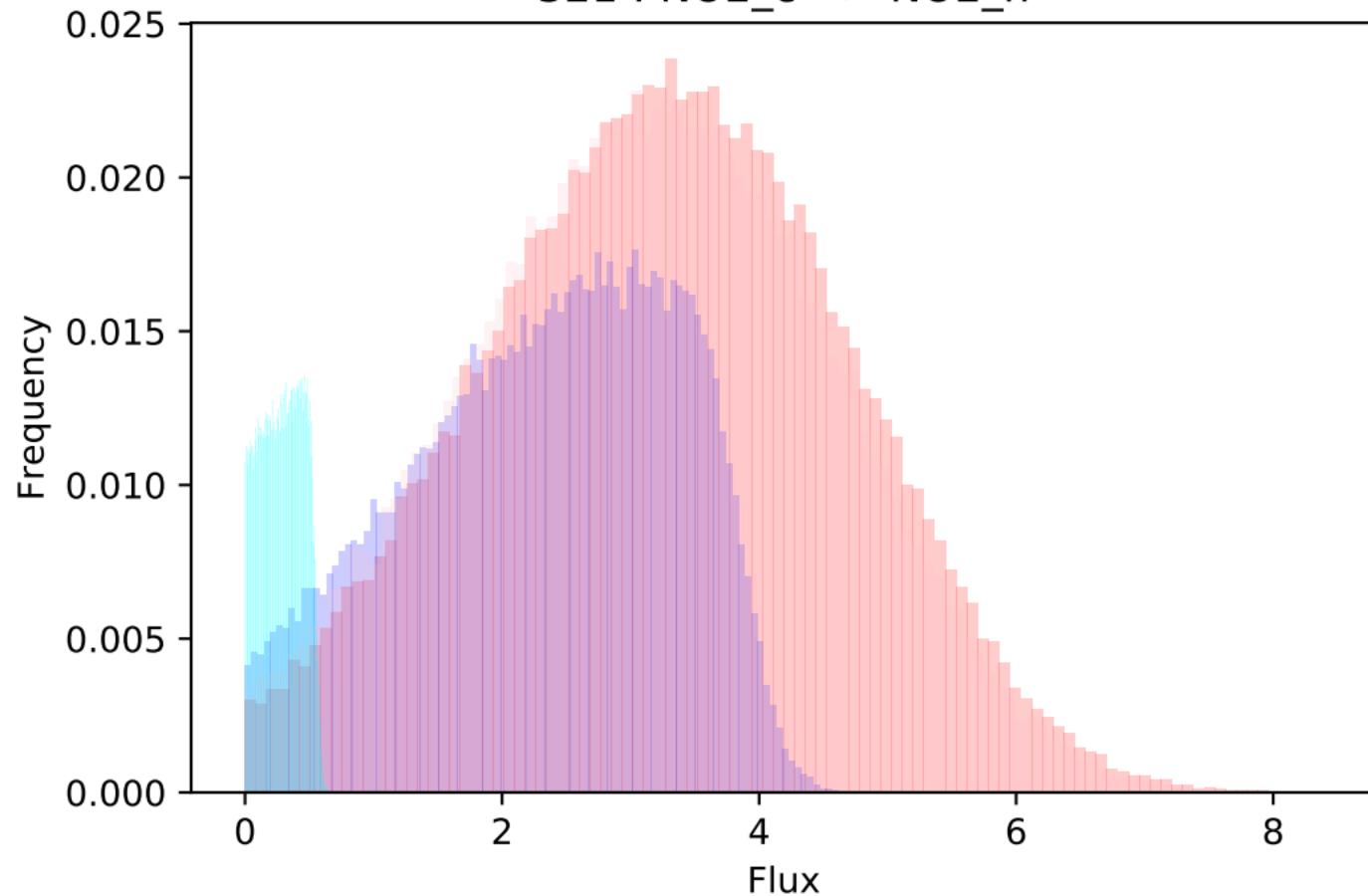




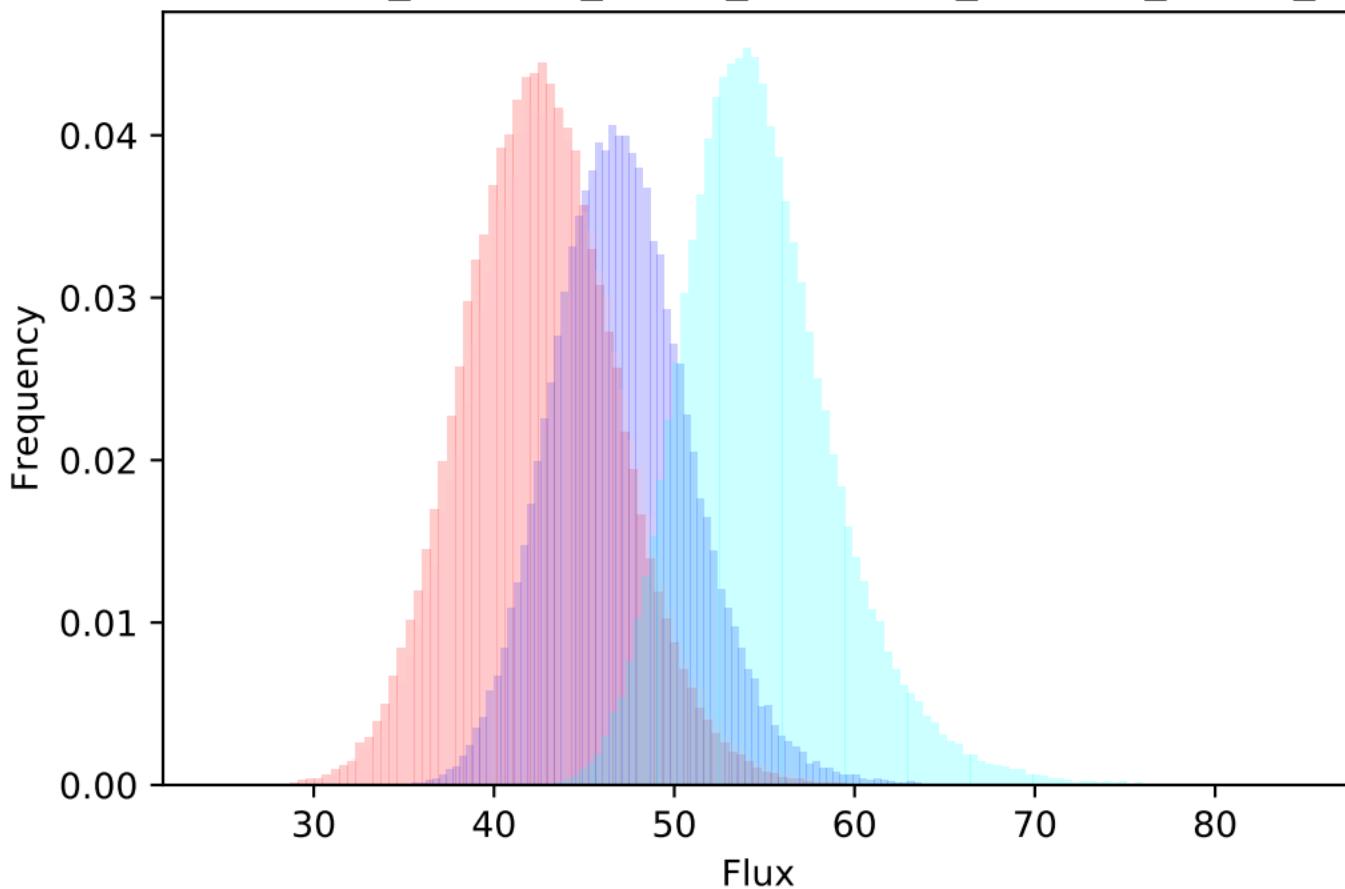
320 : SO4\_c <=> SO4\_h



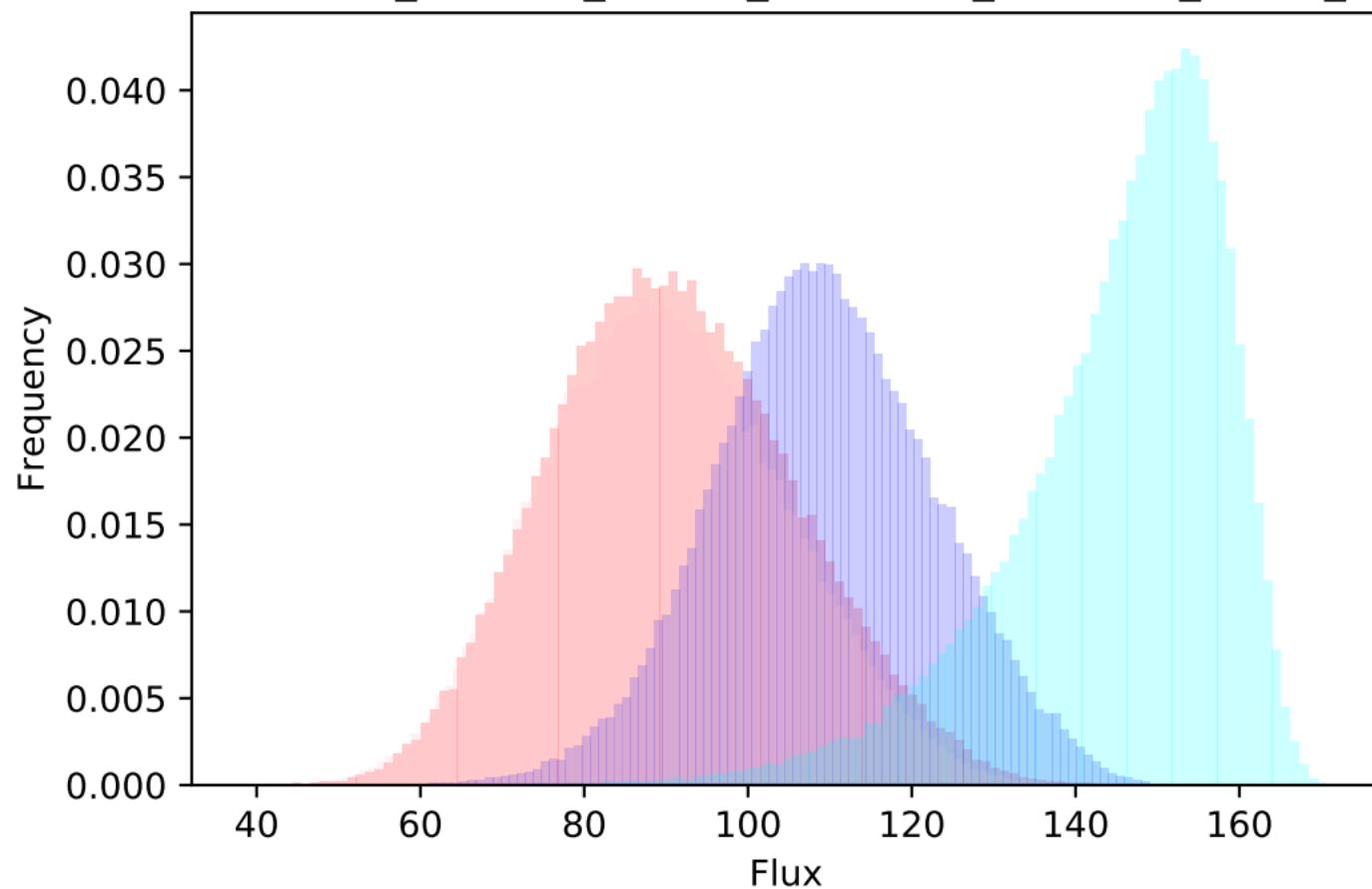
321 : NO2\_c --> NO2\_h



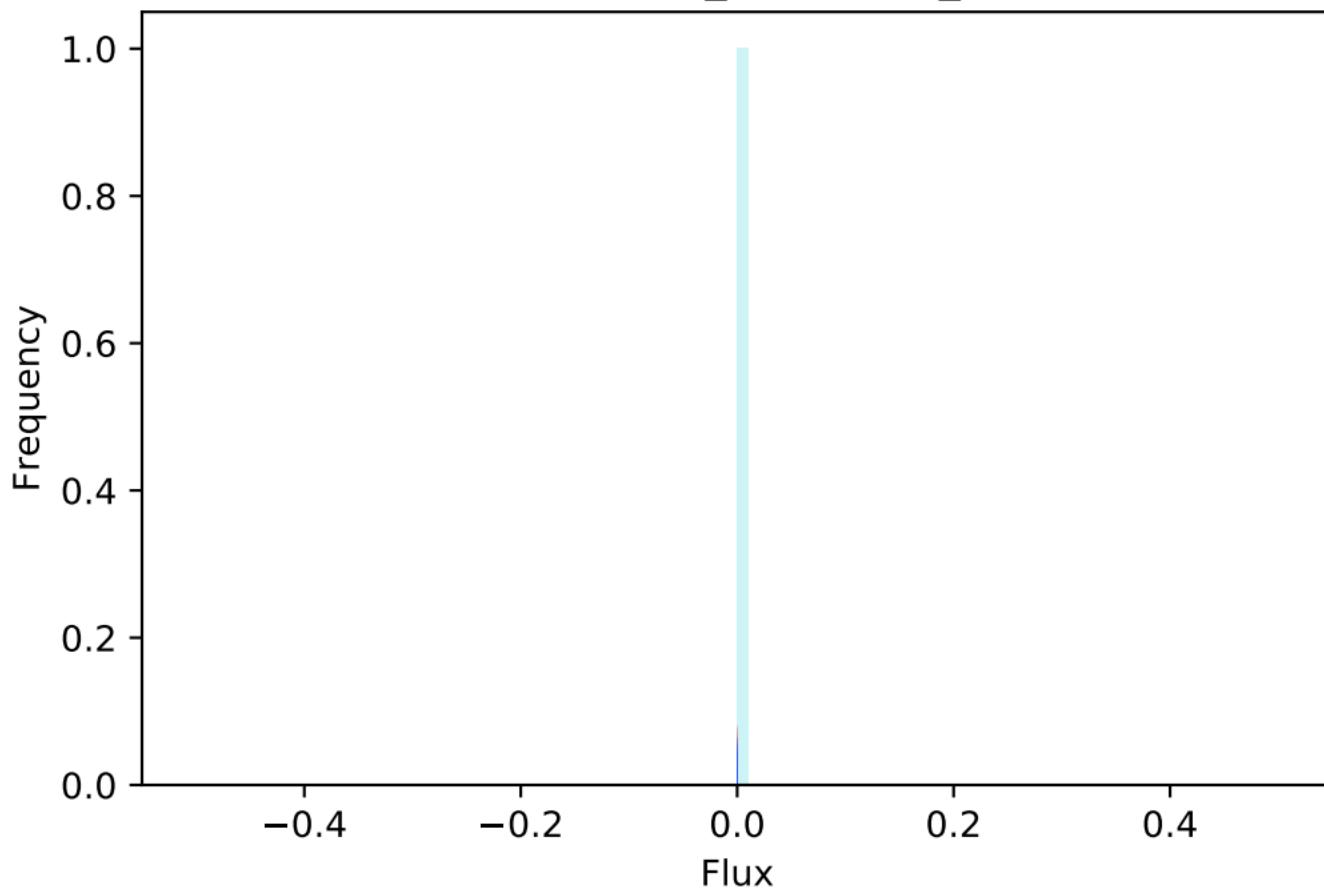
322 : ADP\_h + ATP\_c + Pi\_h  $\rightarrow$  ADP\_c + ATP\_h + Pi\_c



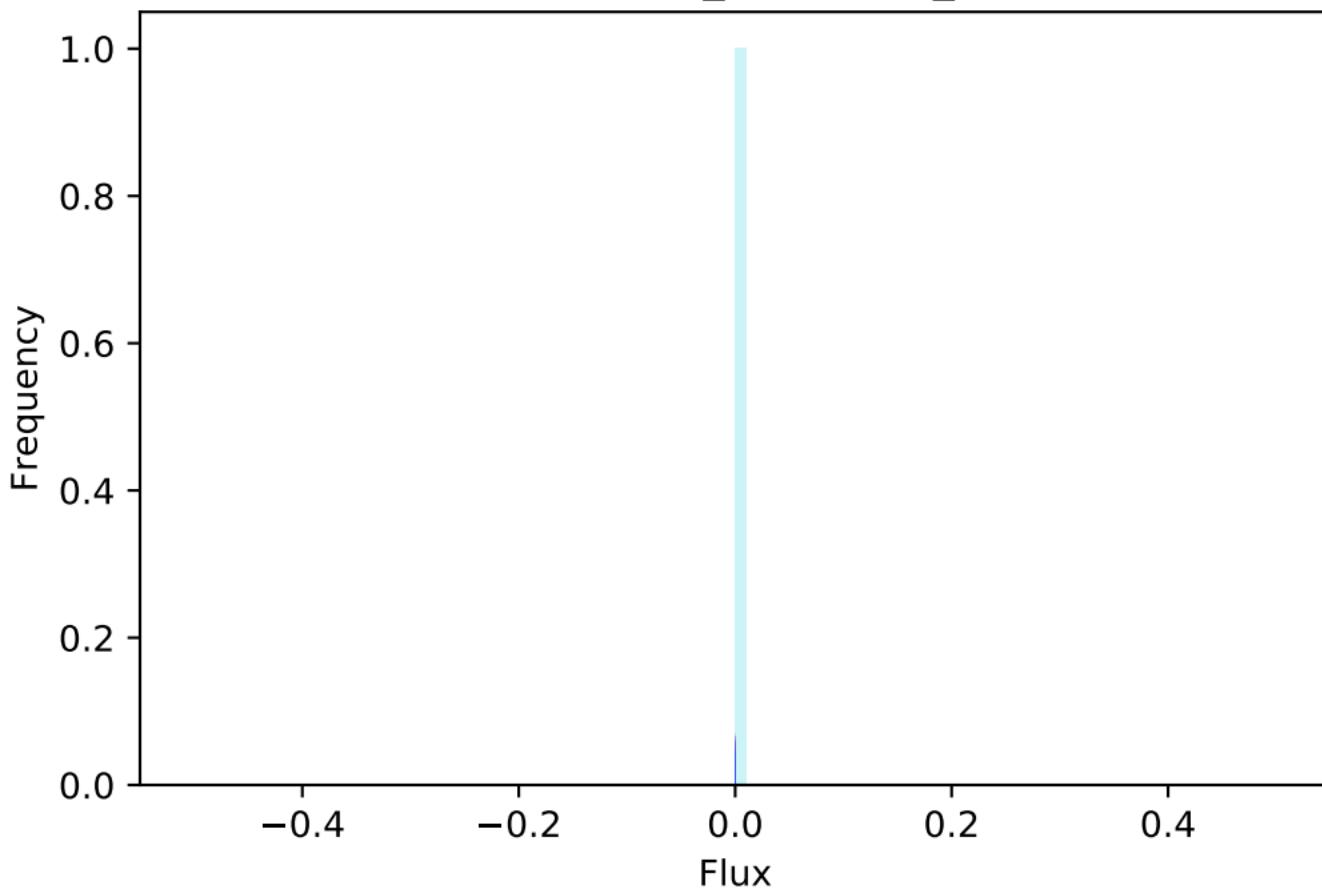
323 : ADP\_c + ATP\_m + Pi\_c --> ADP\_m + ATP\_c + Pi\_m



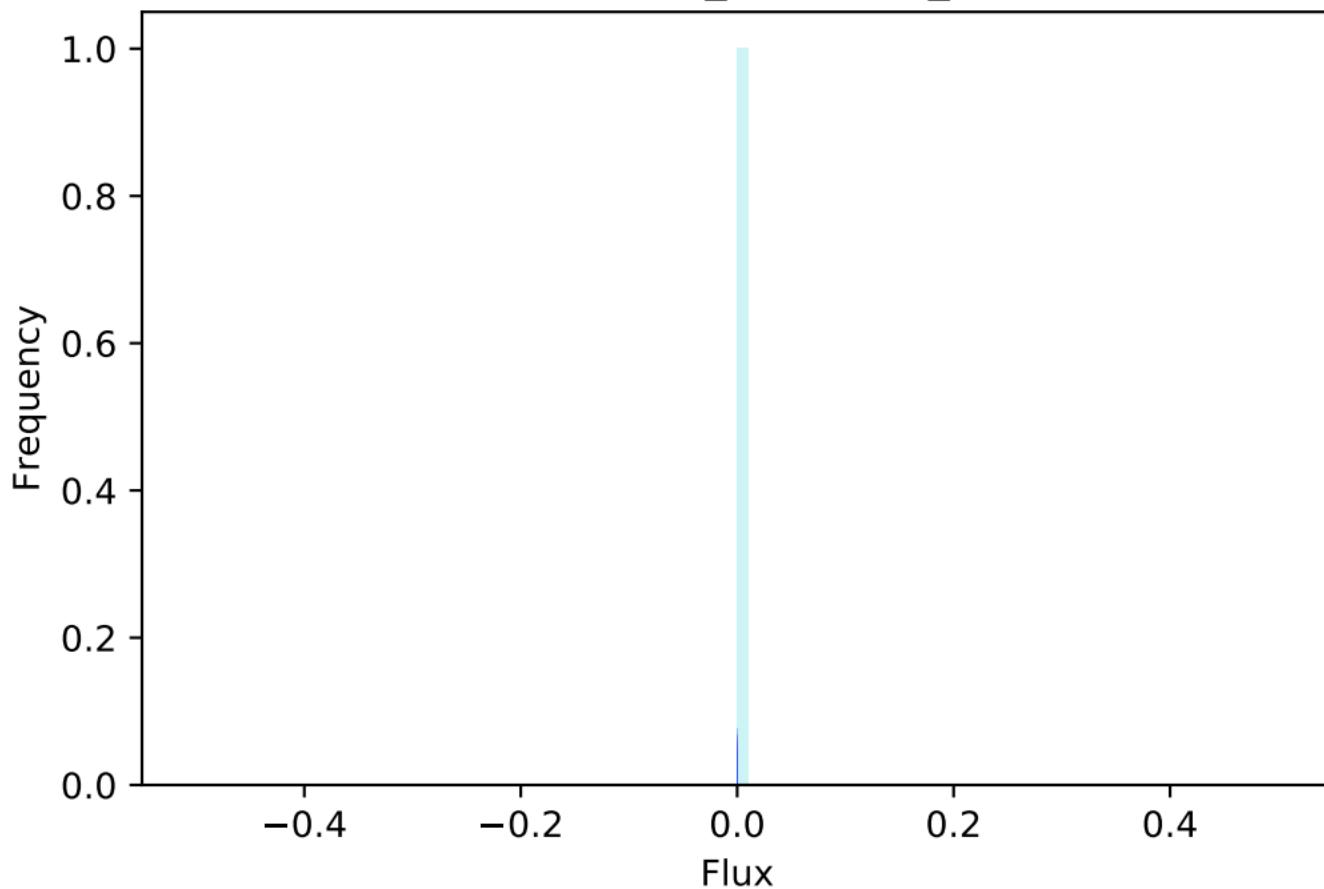
324 : AMP\_h --> AMP\_c



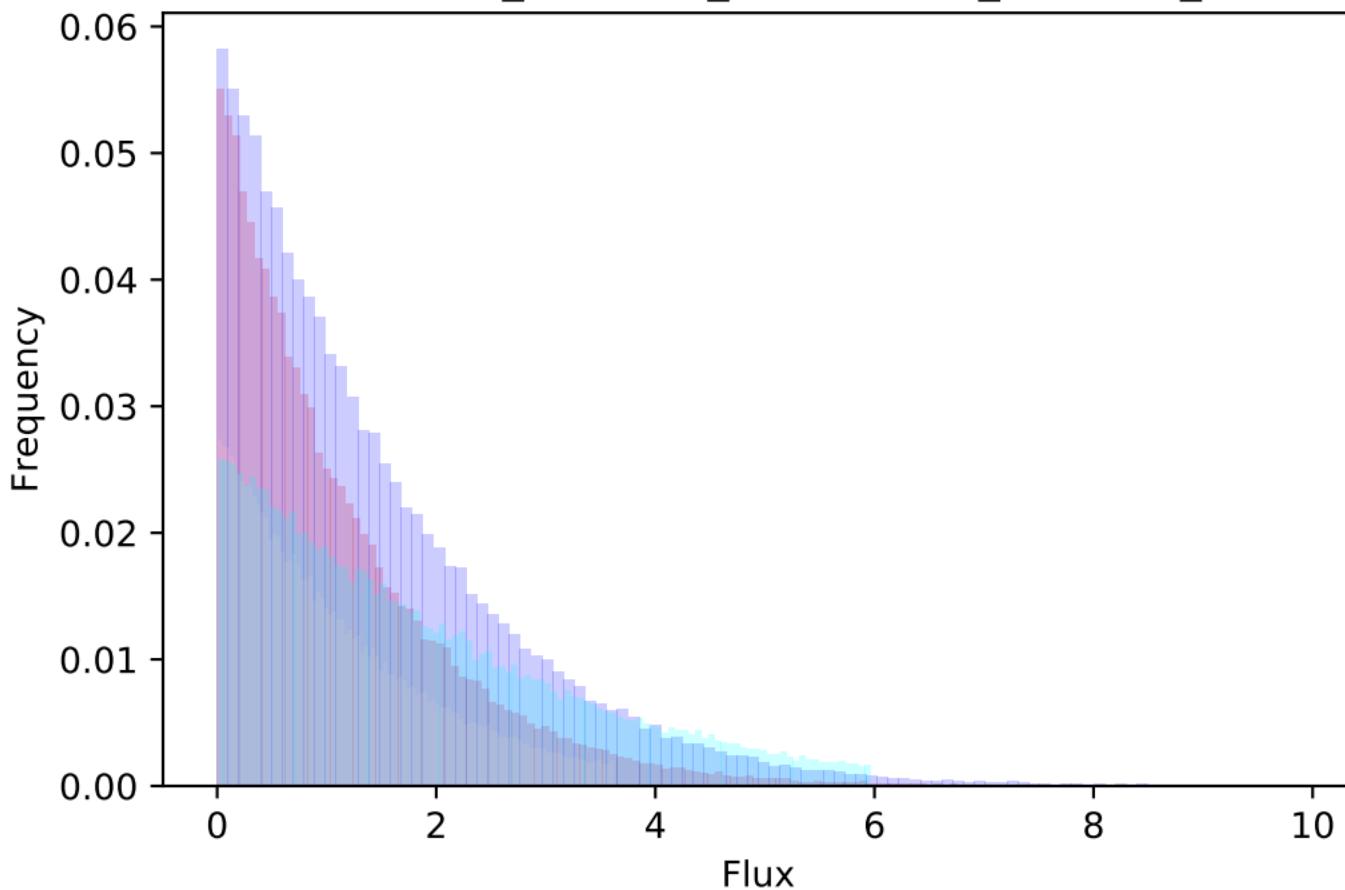
325 : ADP\_h --> ADP\_c

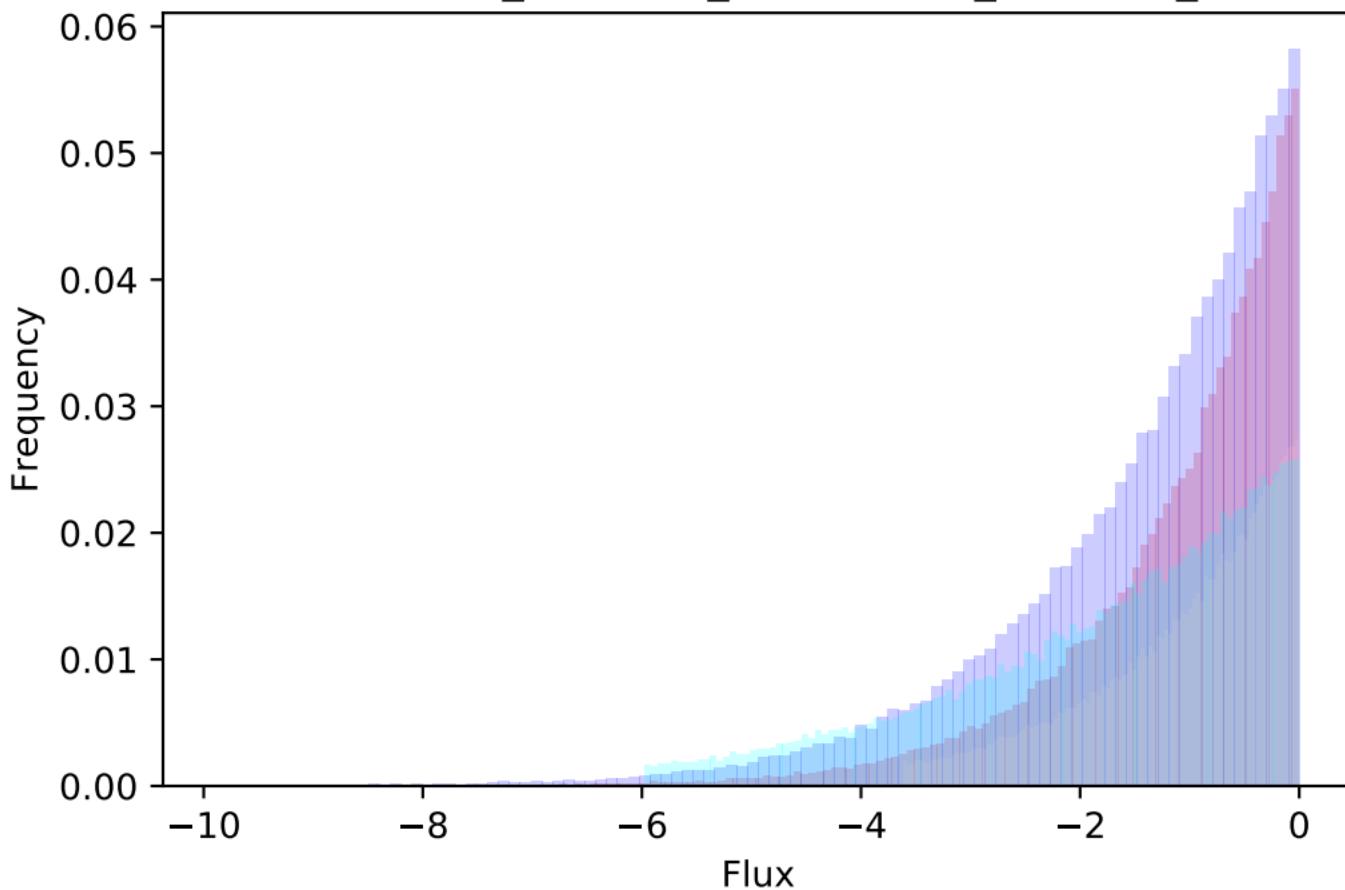
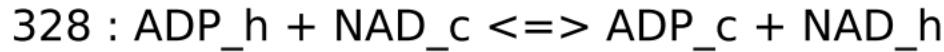


326 : ATP\_h --> ATP\_c

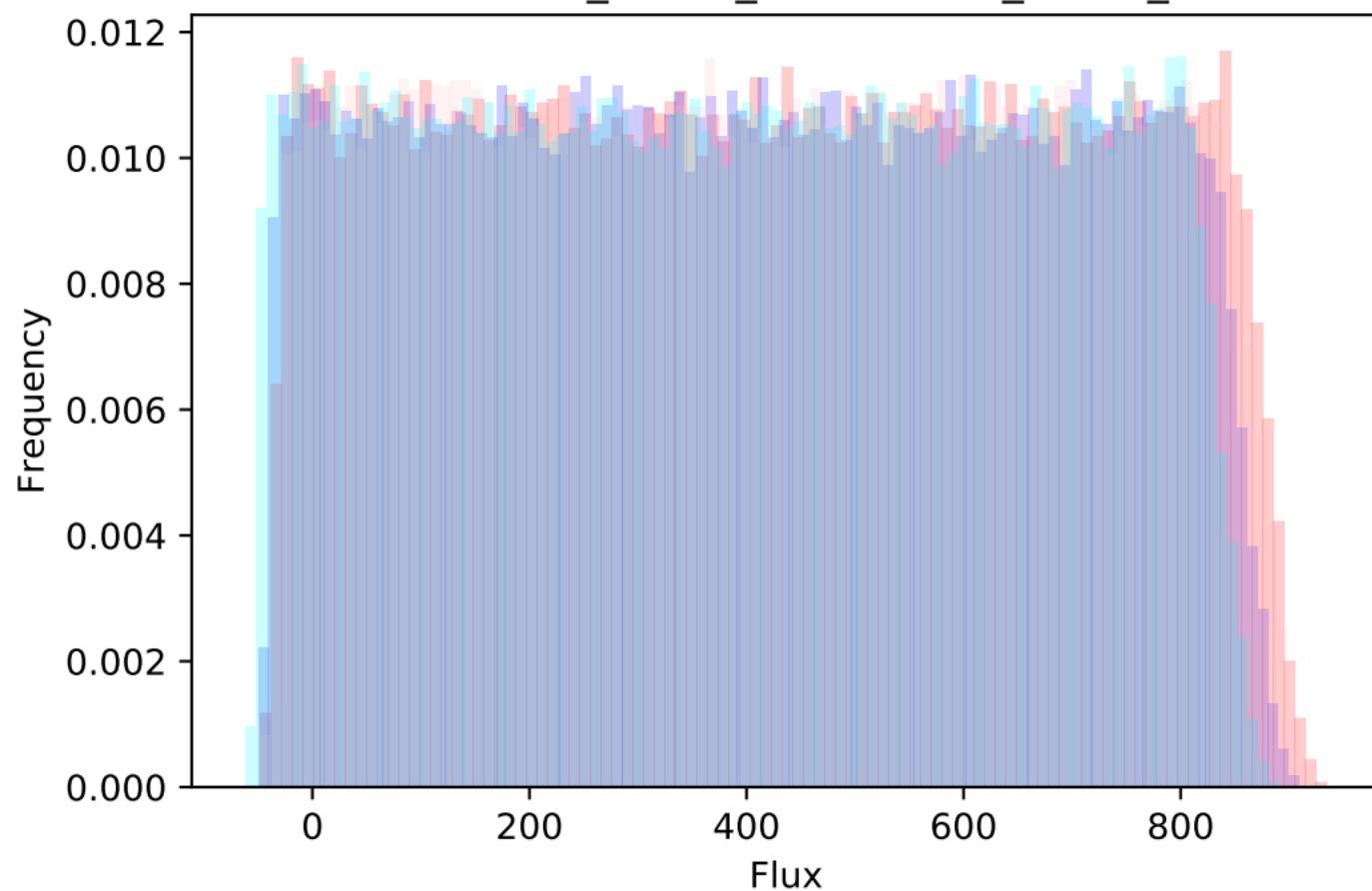


327 : AMP\_h + NAD\_c <=> AMP\_c + NAD\_h

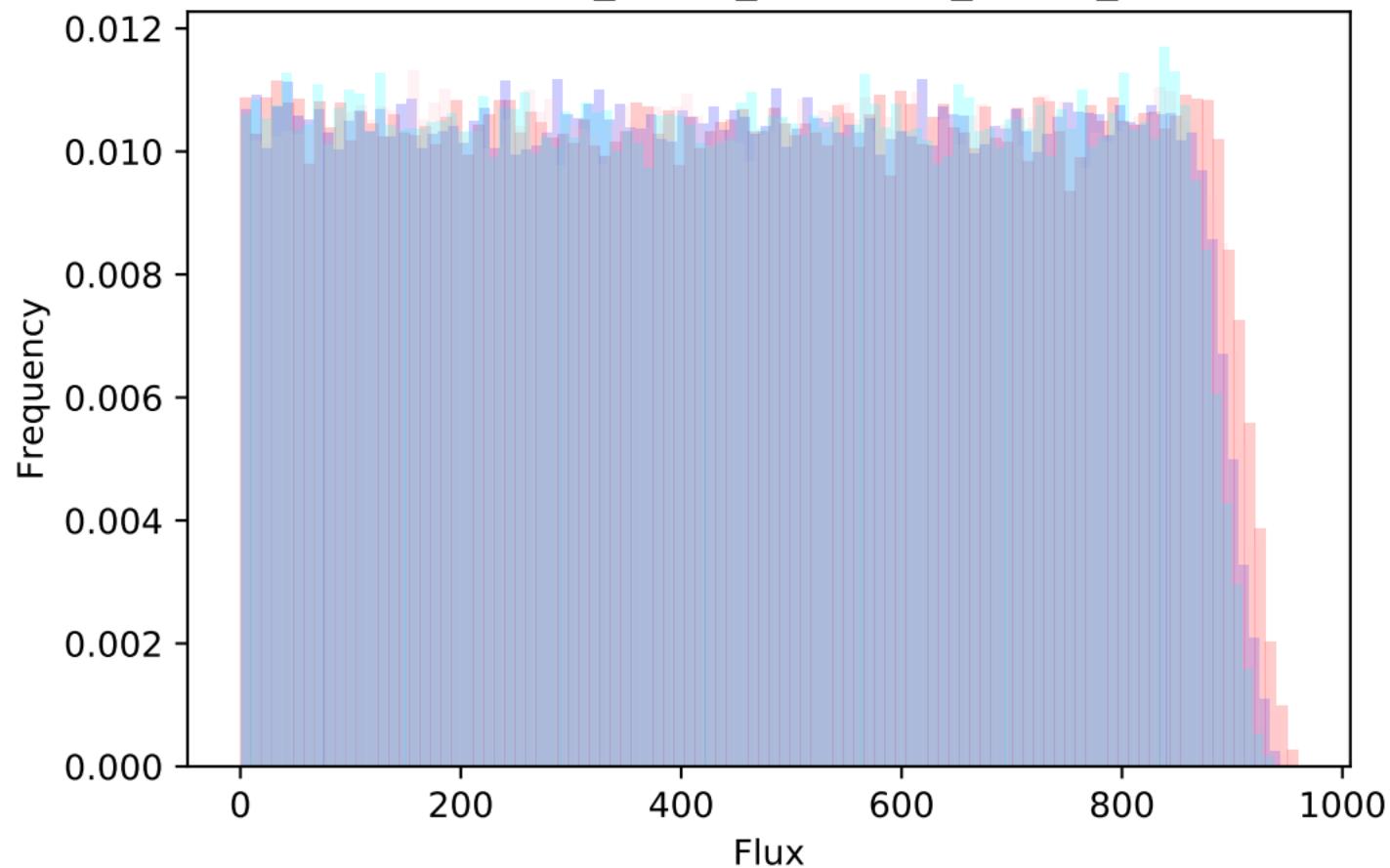




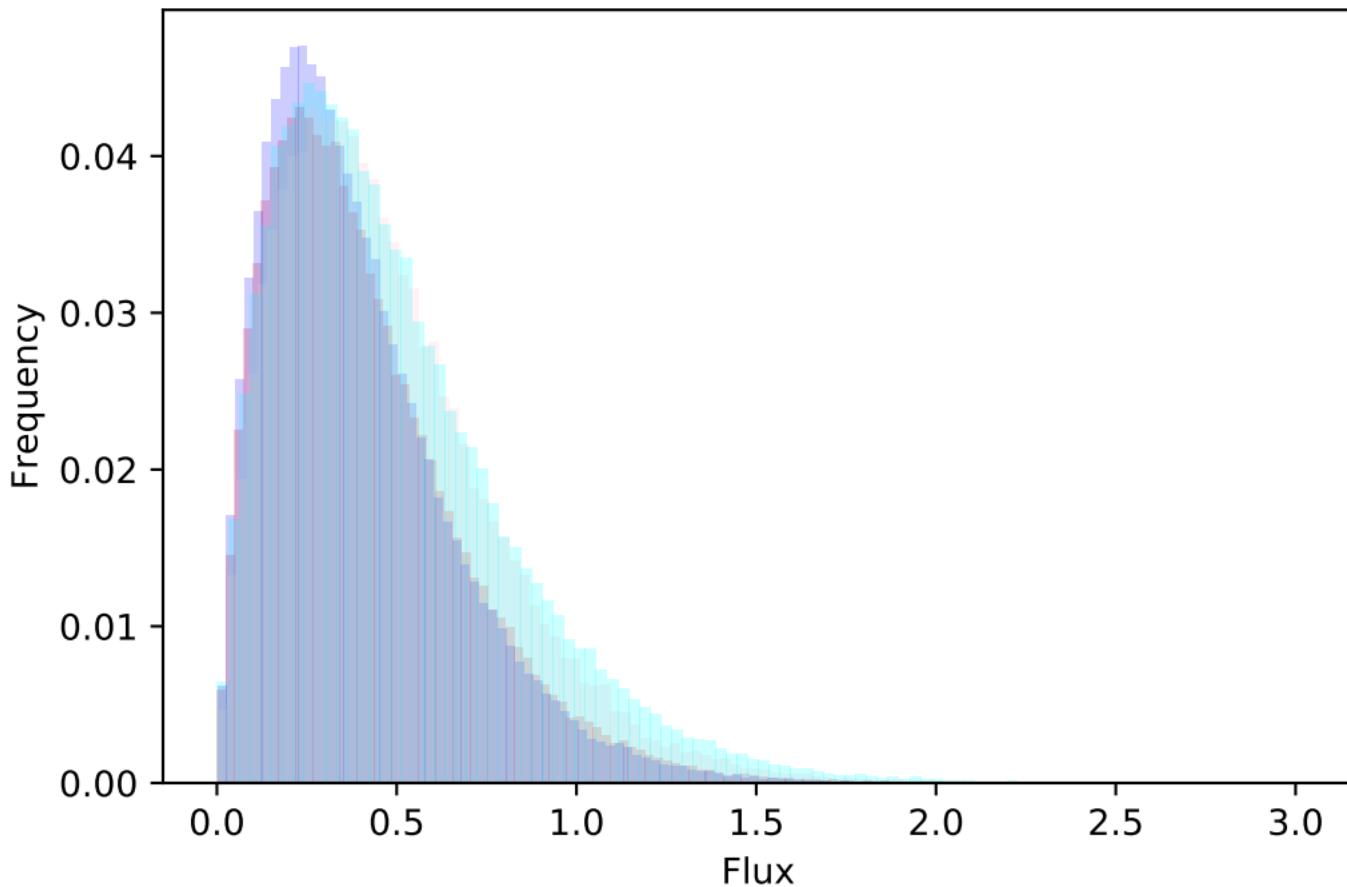
329 : PGA\_h + Pi\_c <=> PGA\_c + Pi\_h



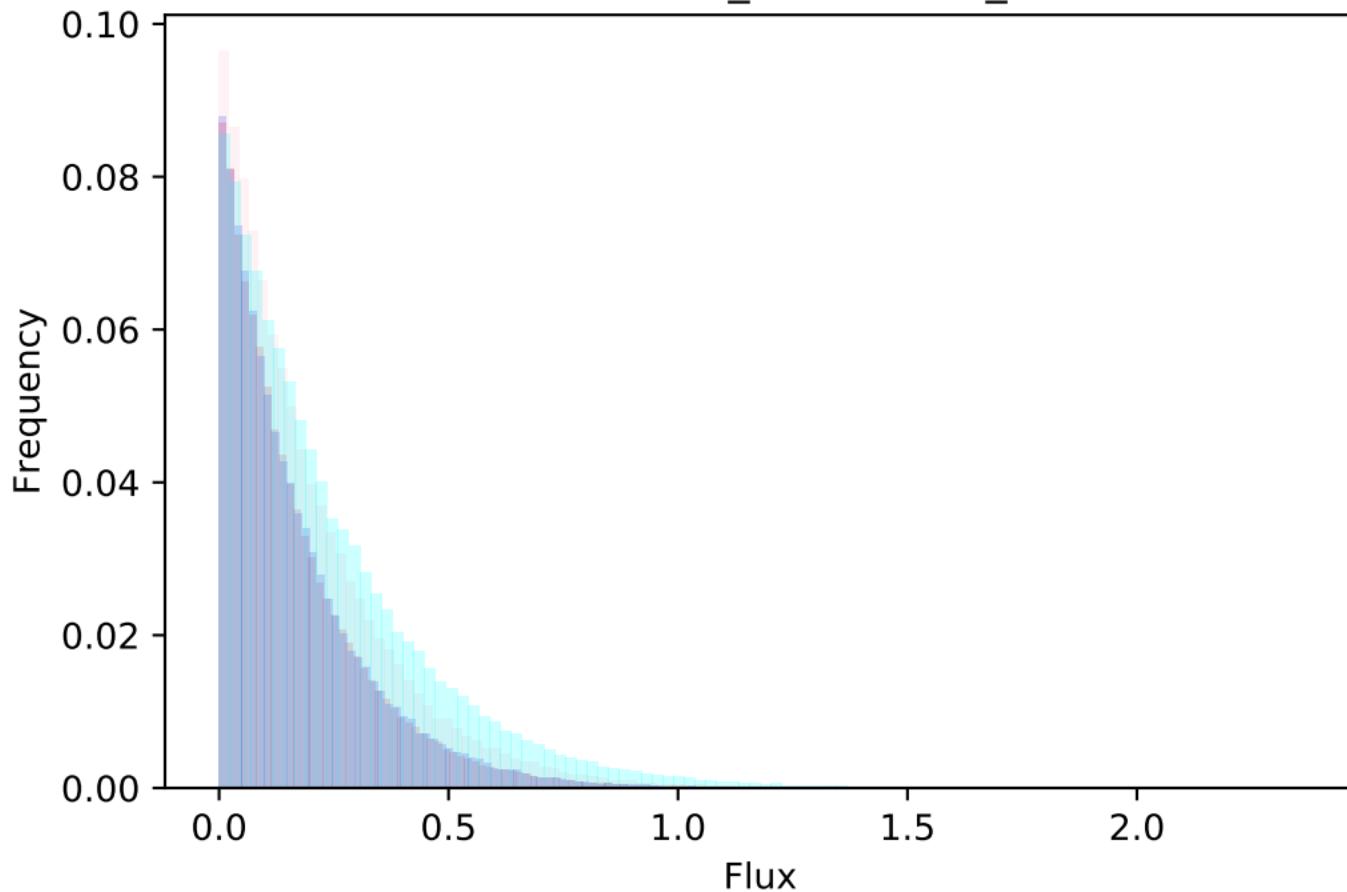
332 : PEP\_c + Pi\_h  $\rightarrow$  PEP\_h + Pi\_c



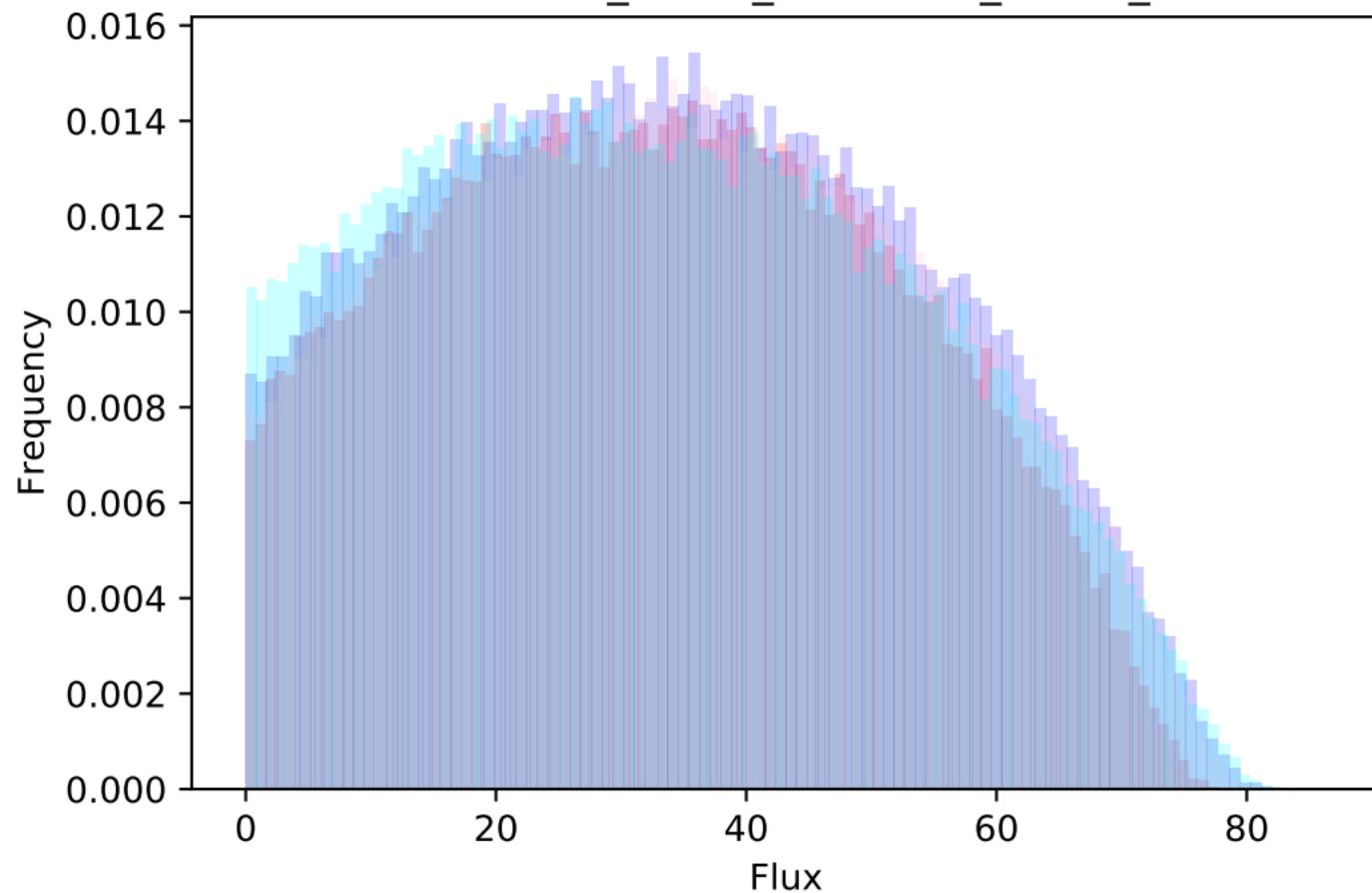
333 : GCA\_h --> GCA\_c



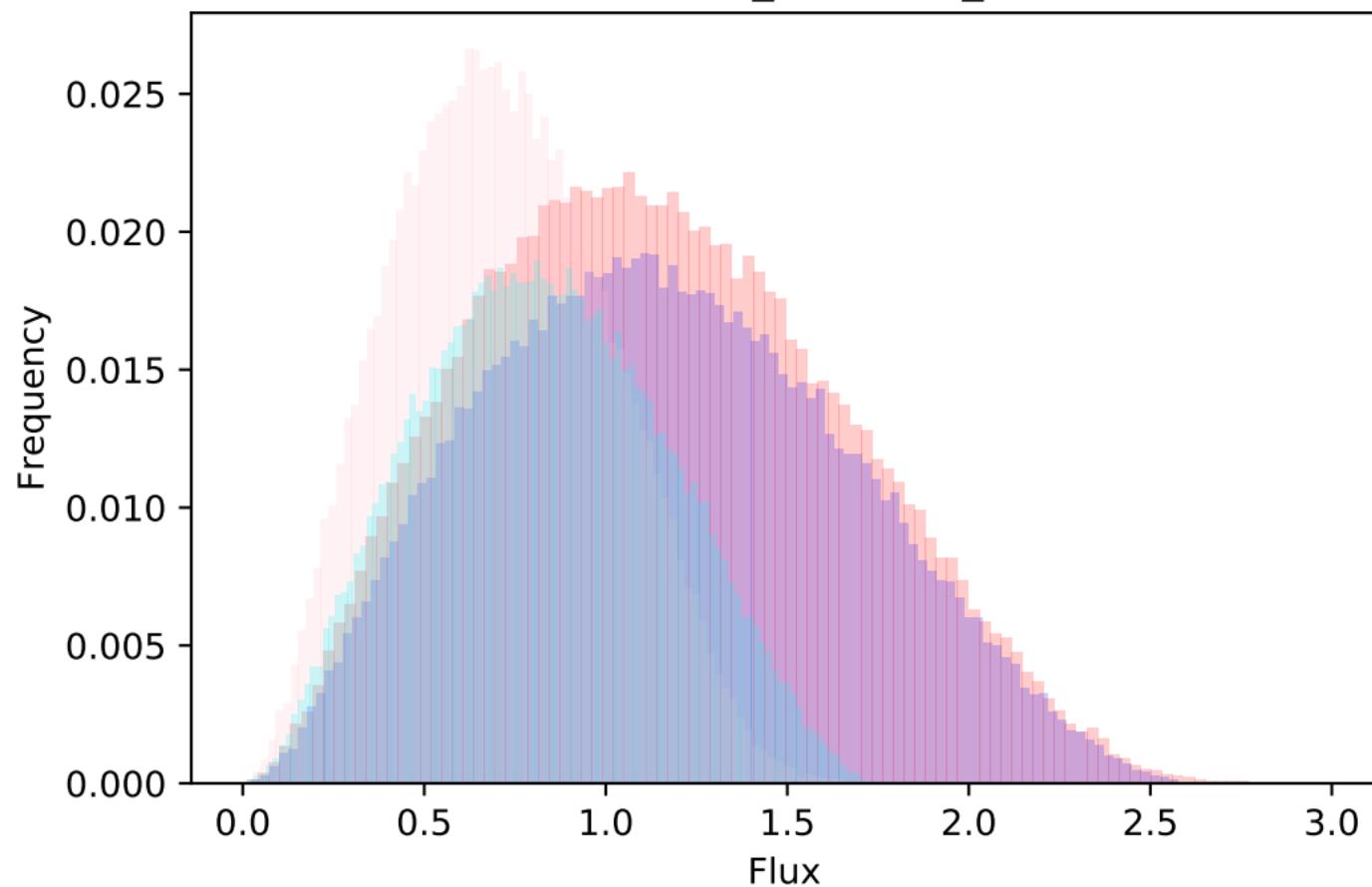
334 : GCEA\_c --> GCEA\_h



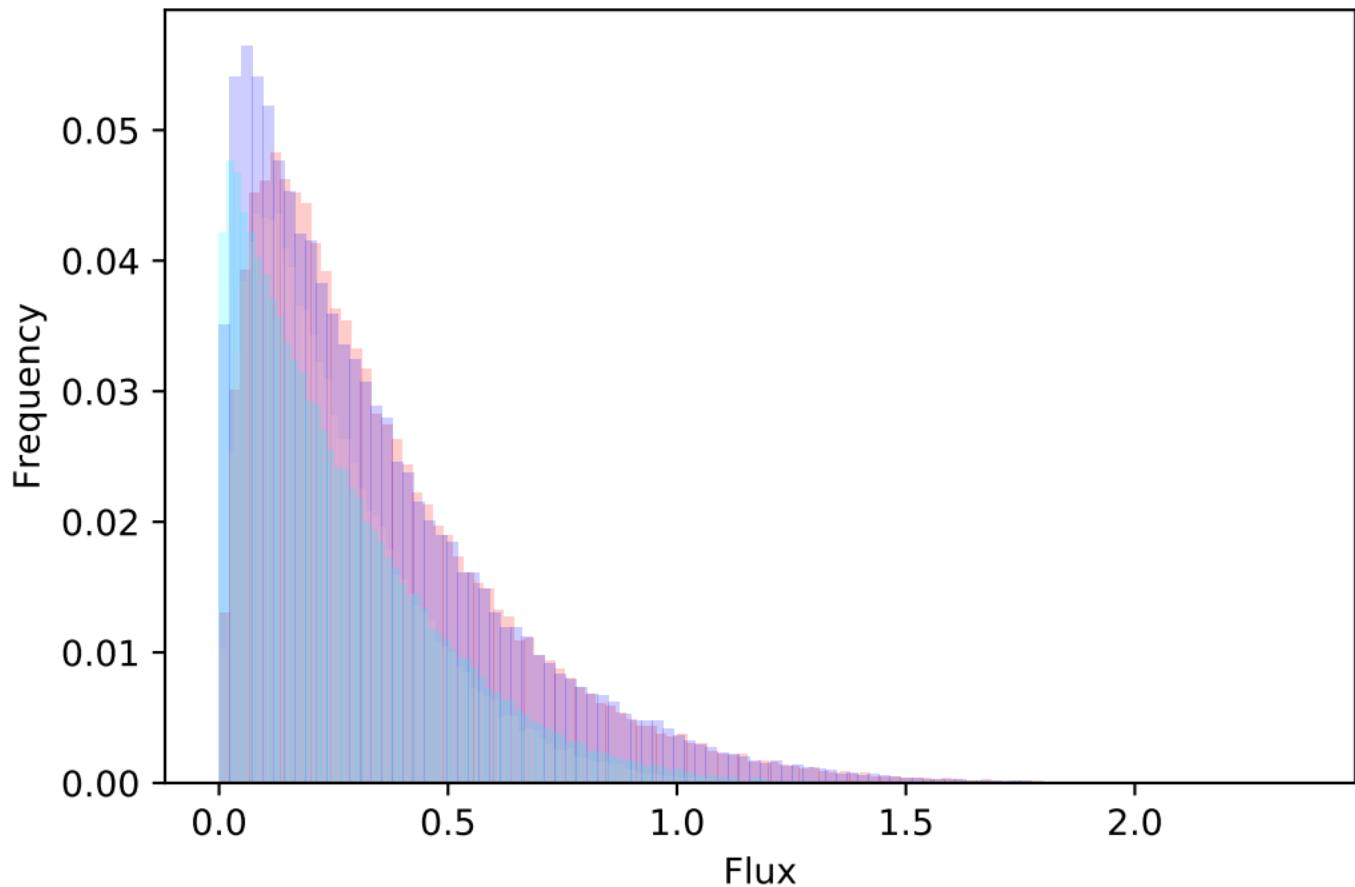
335 : G6P\_c + Pi\_h --> G6P\_h + Pi\_c



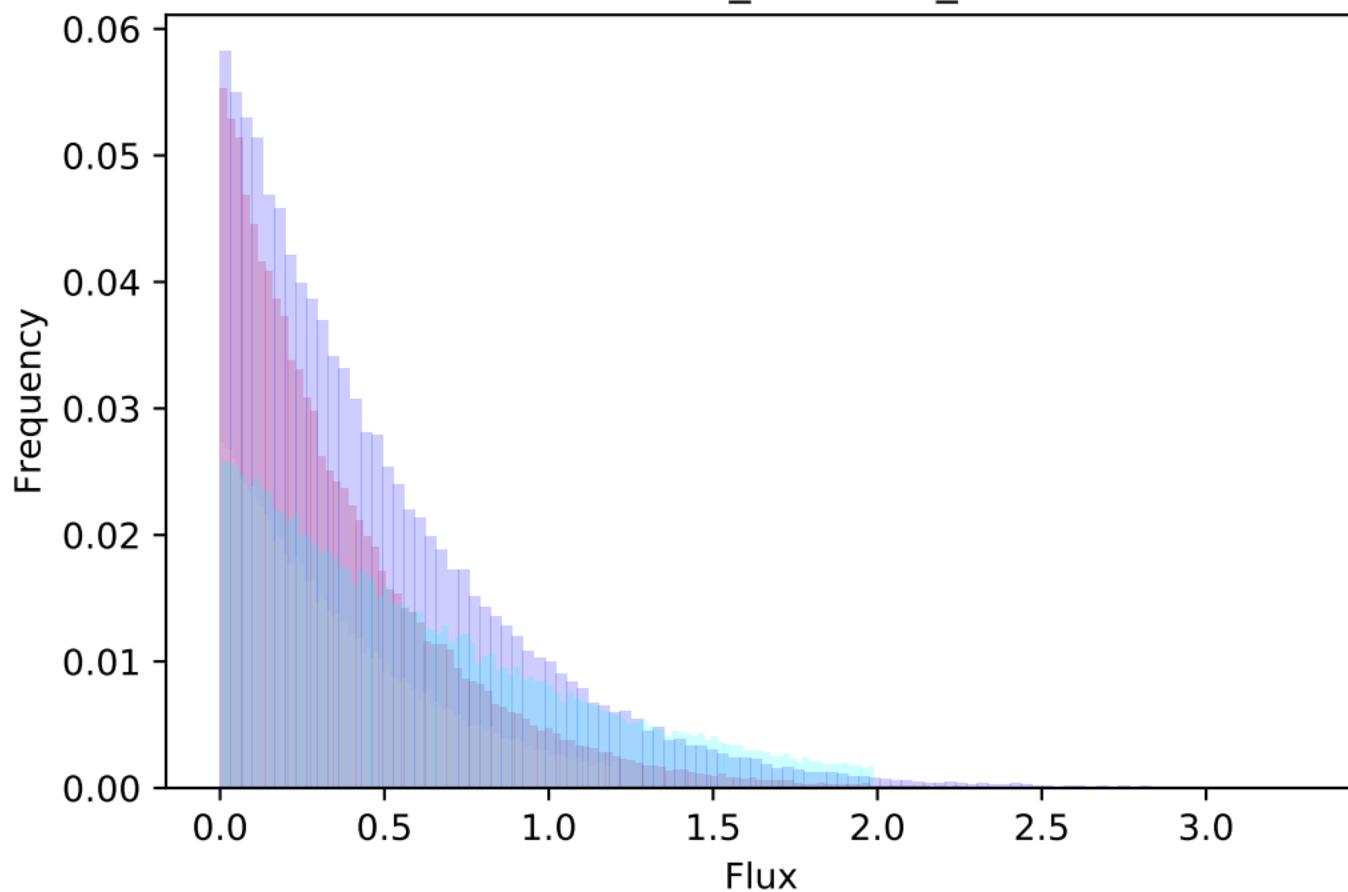
336 : Glc\_h --> Glc\_c



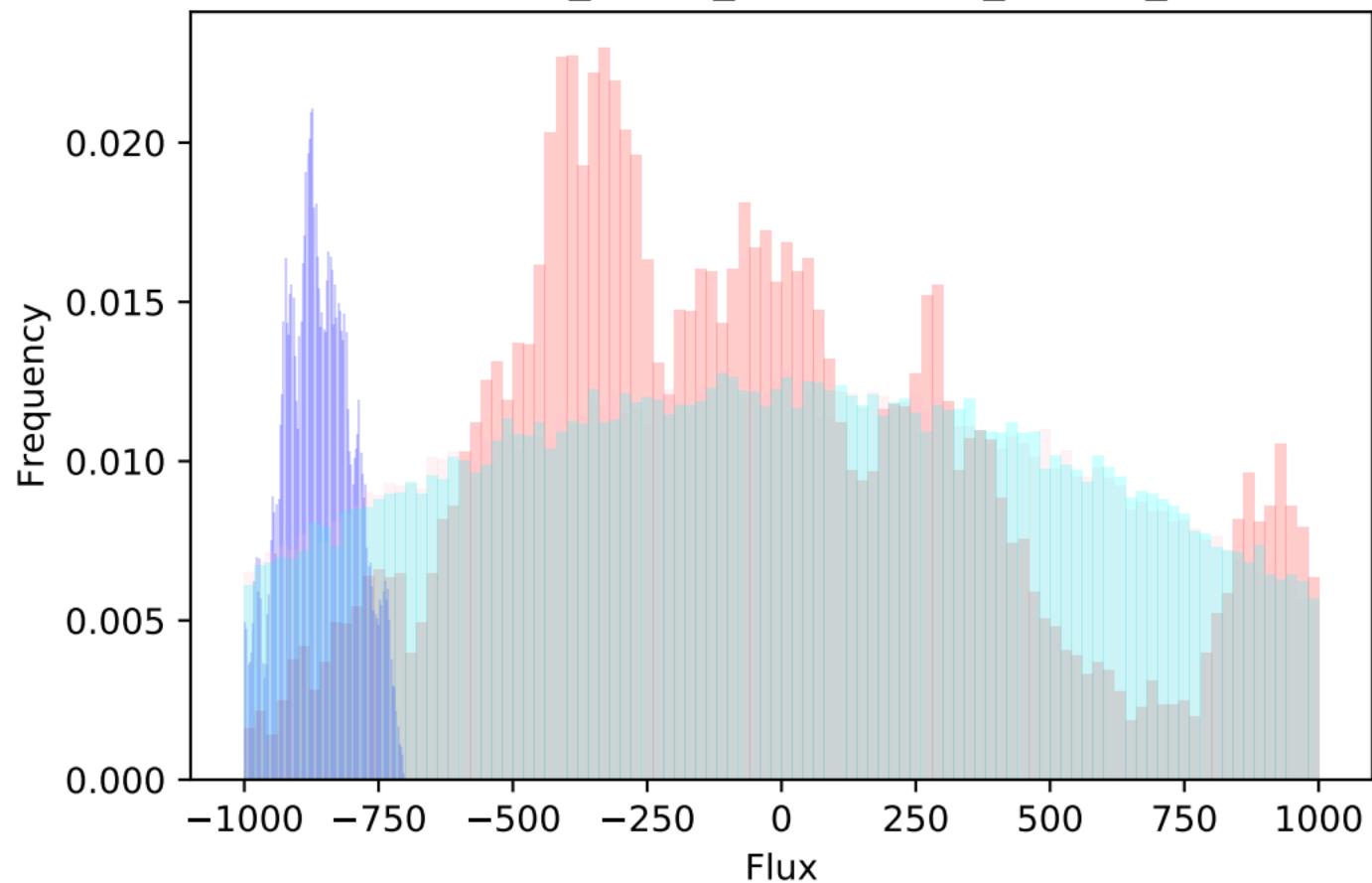
337 : Mas\_h --> Mas\_c



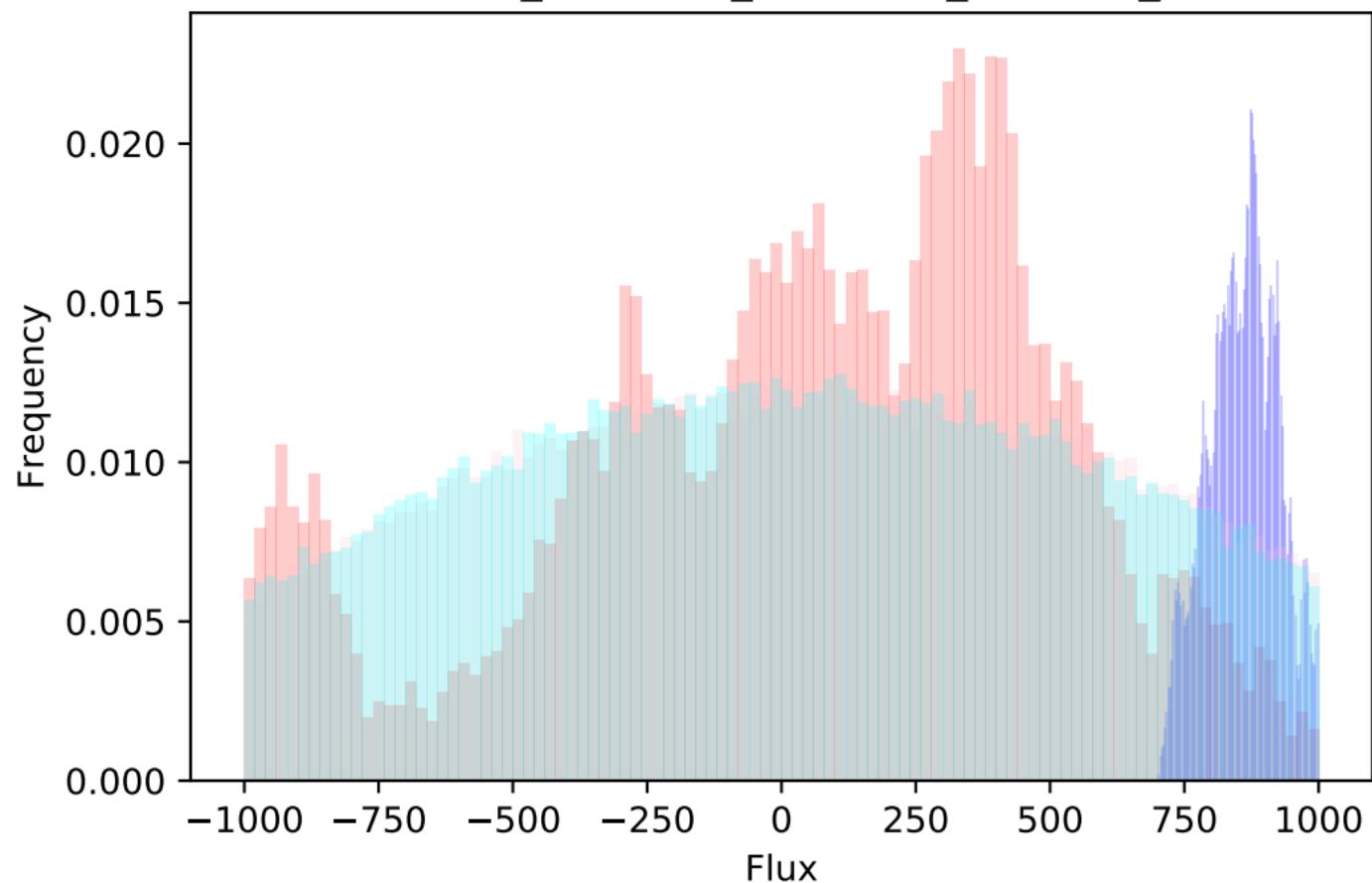
338 : Rib\_c --> Rib\_h



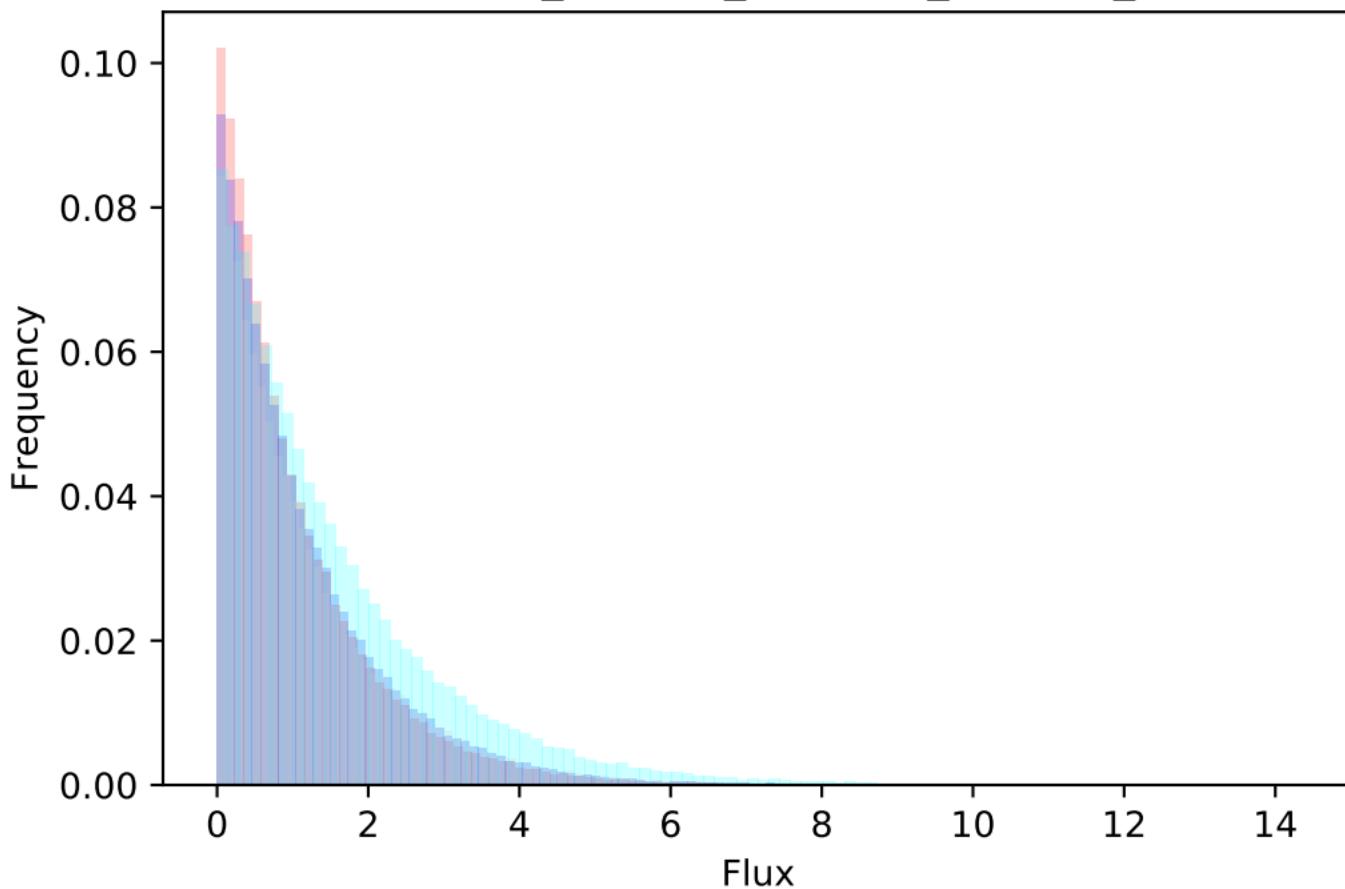
339 : Mal\_c + Pi\_m <=> Mal\_m + Pi\_c



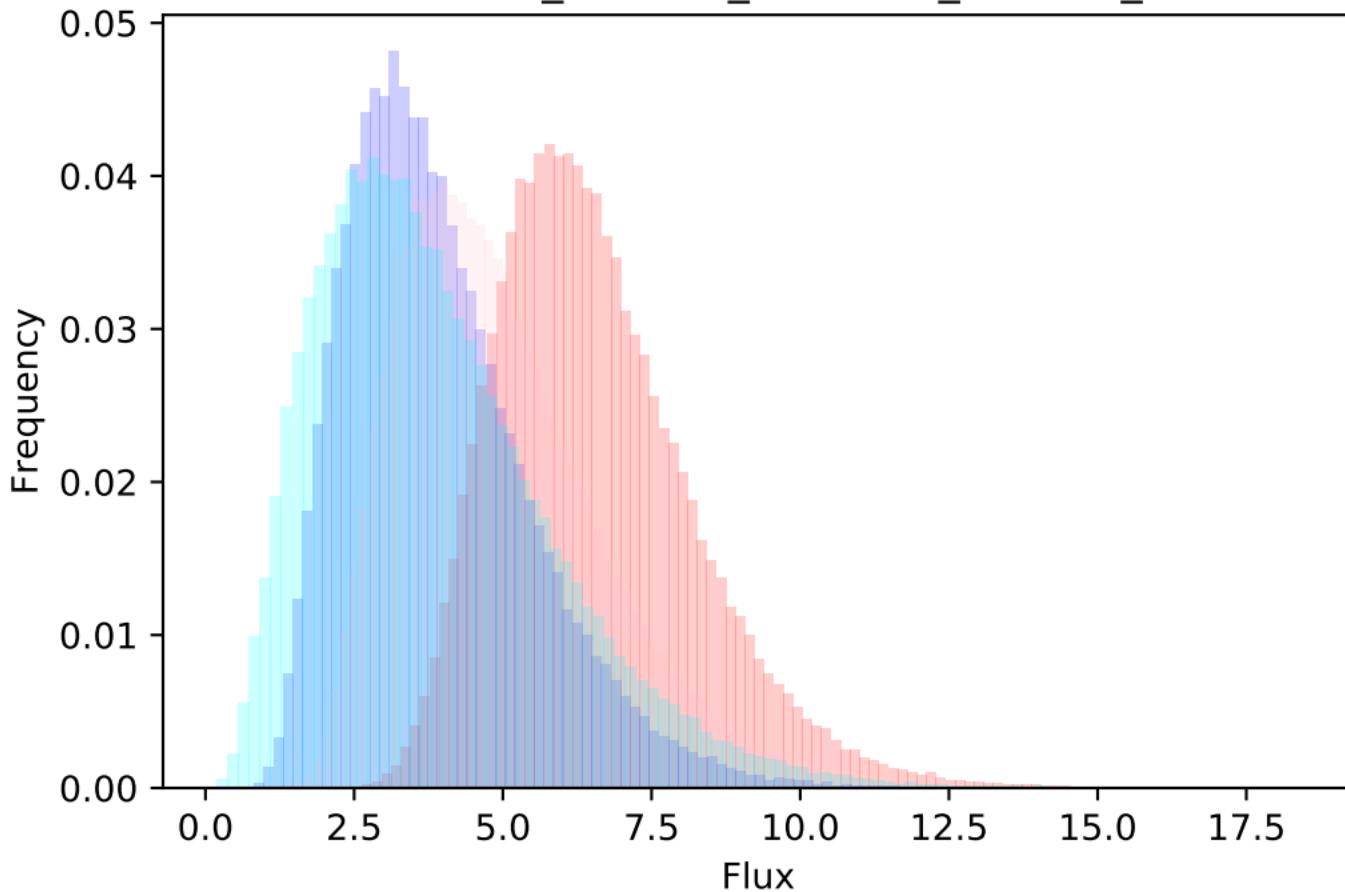
$340 : \text{Pi}_m + \text{SCA}_c \rightleftharpoons \text{Pi}_c + \text{SCA}_m$



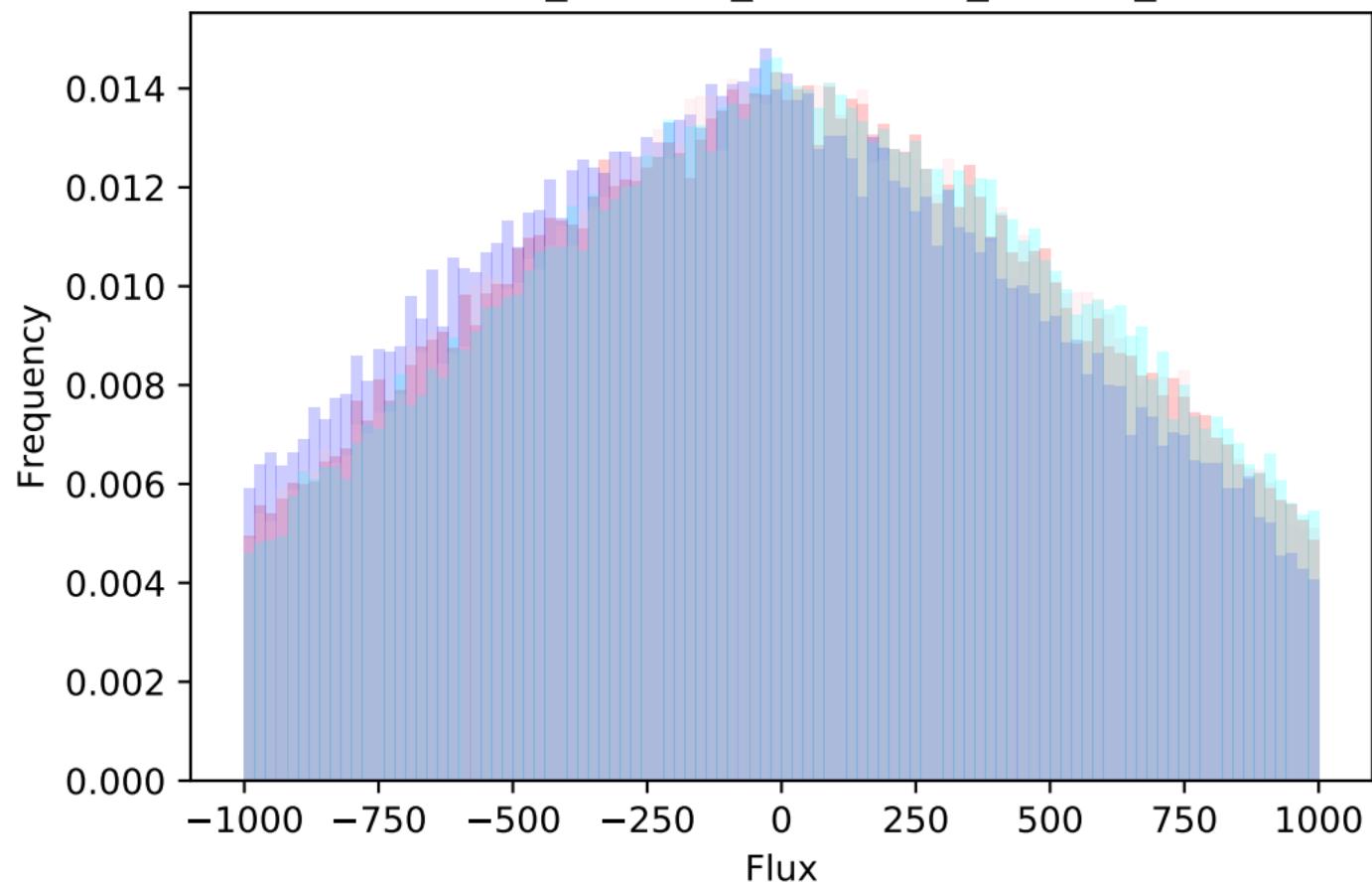
341 : KG\_c + Mal\_h  $\rightarrow$  KG\_h + Mal\_c



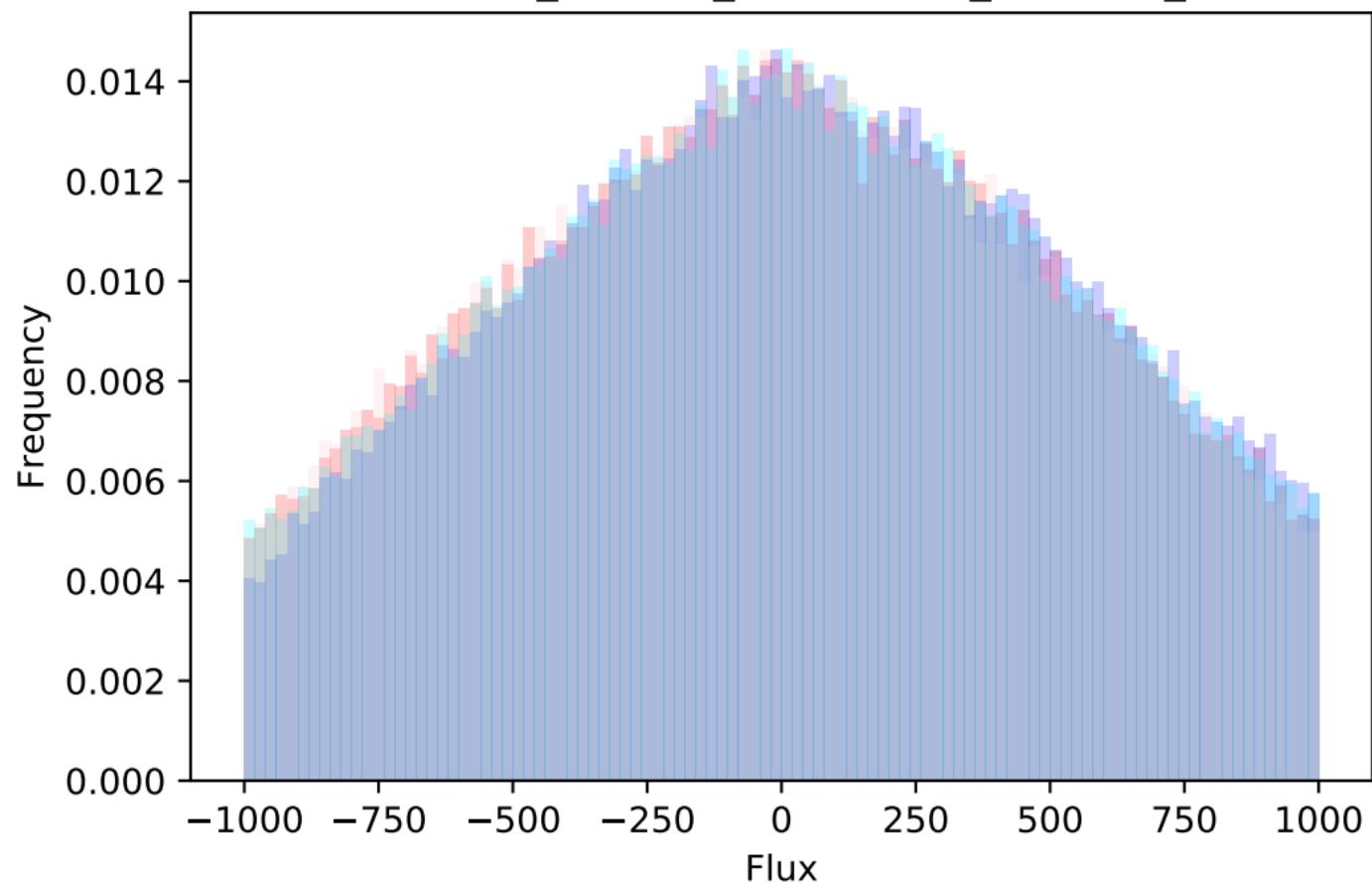
342 : Glu\_h + Mal\_c  $\rightarrow$  Glu\_c + Mal\_h



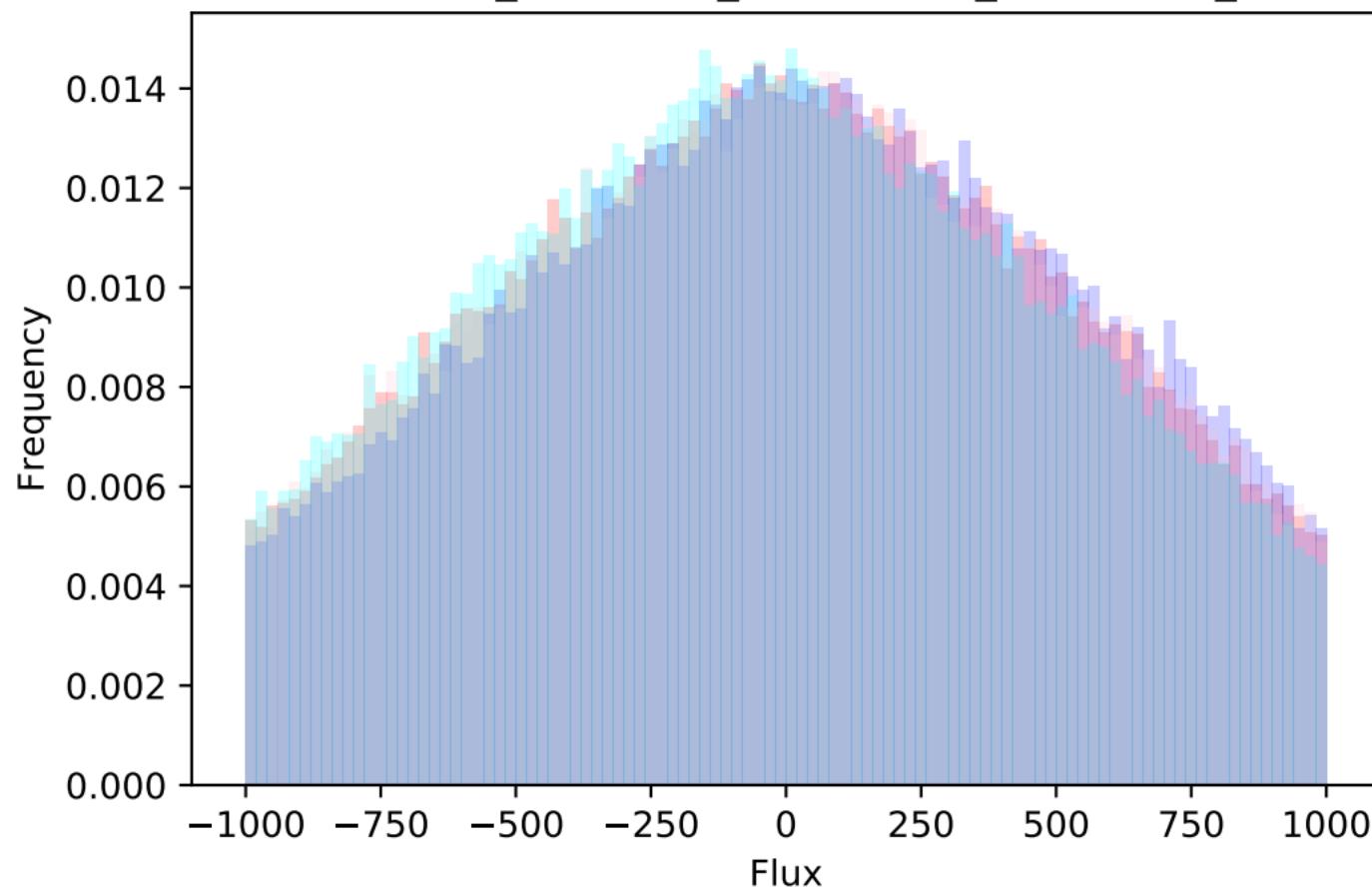
343 : Cit\_m + KG\_c <=> Cit\_c + KG\_m



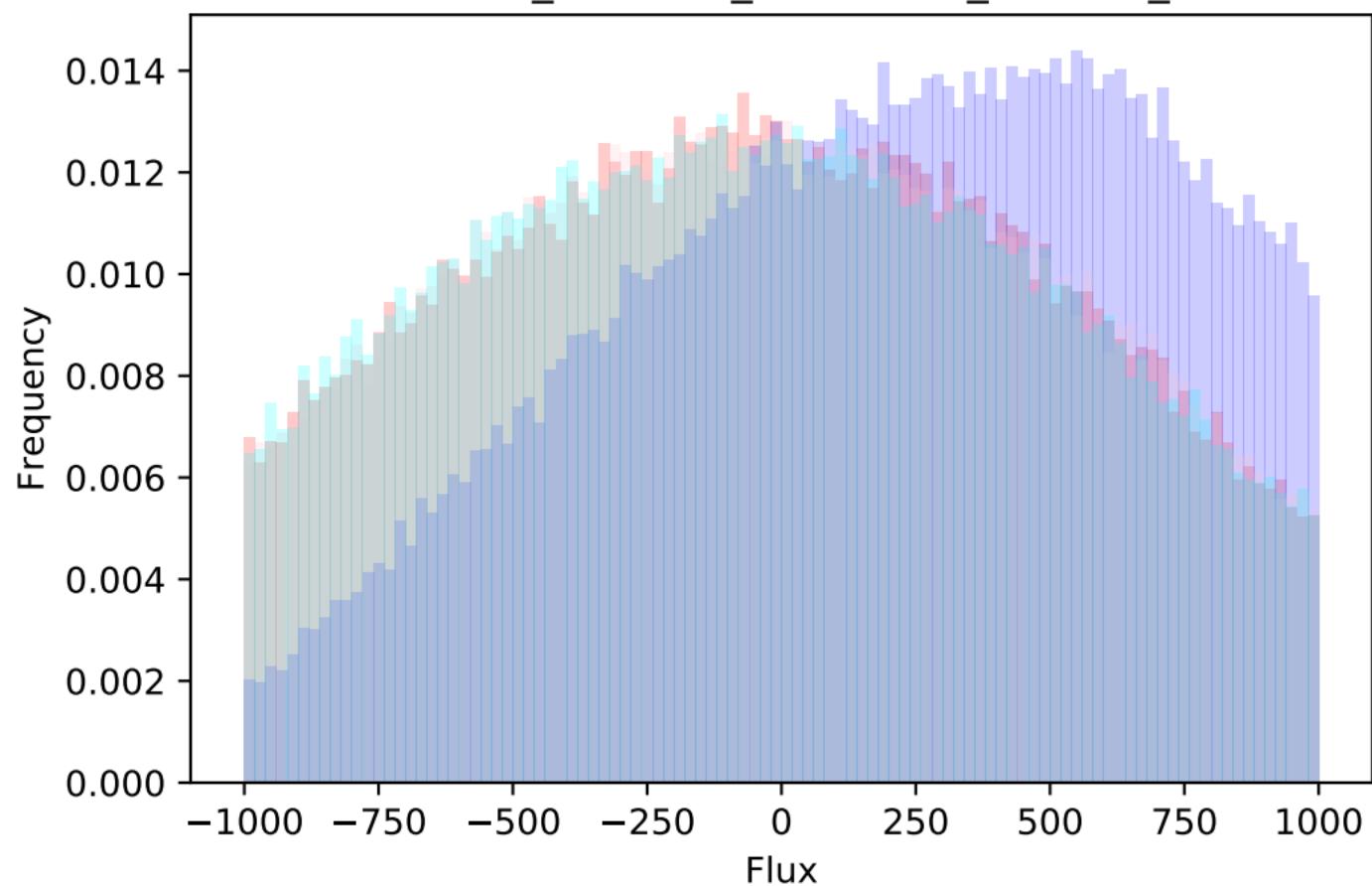
344 : KG\_c + iCit\_m <=> KG\_m + iCit\_c



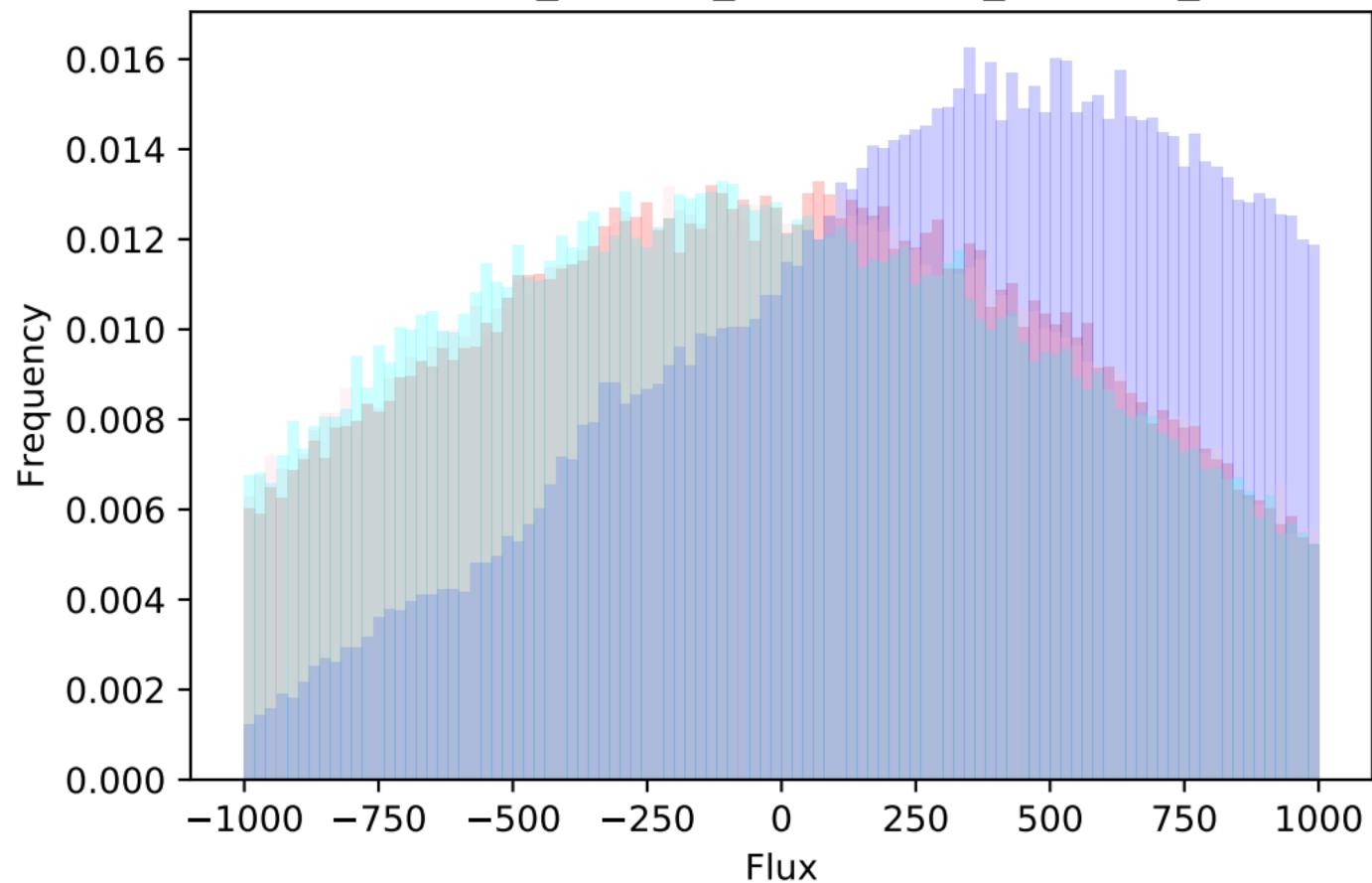
345 : KG\_c + cACN\_m <=> KG\_m + cACN\_c



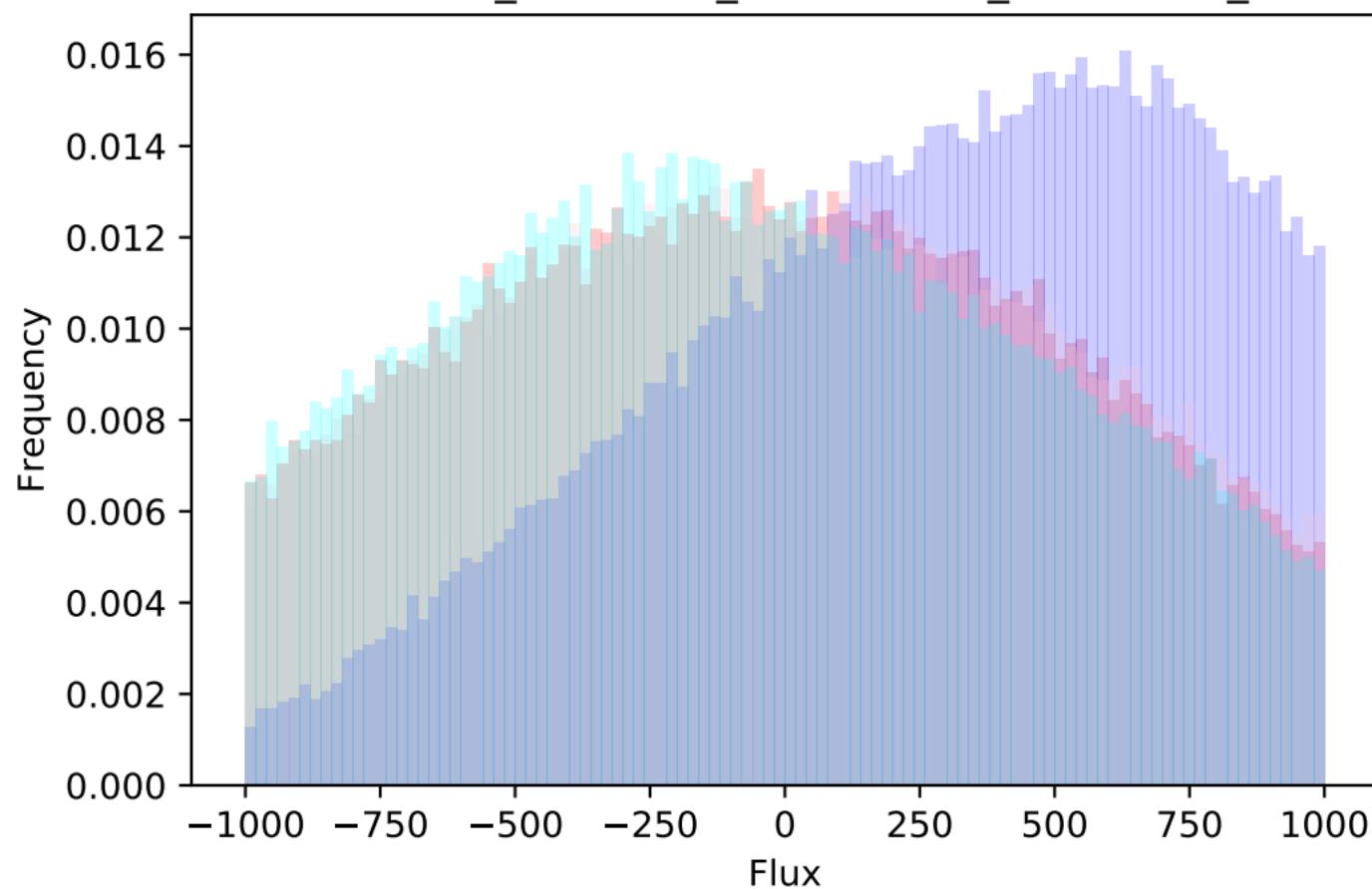
346 : Cit\_m + Mal\_c <=> Cit\_c + Mal\_m



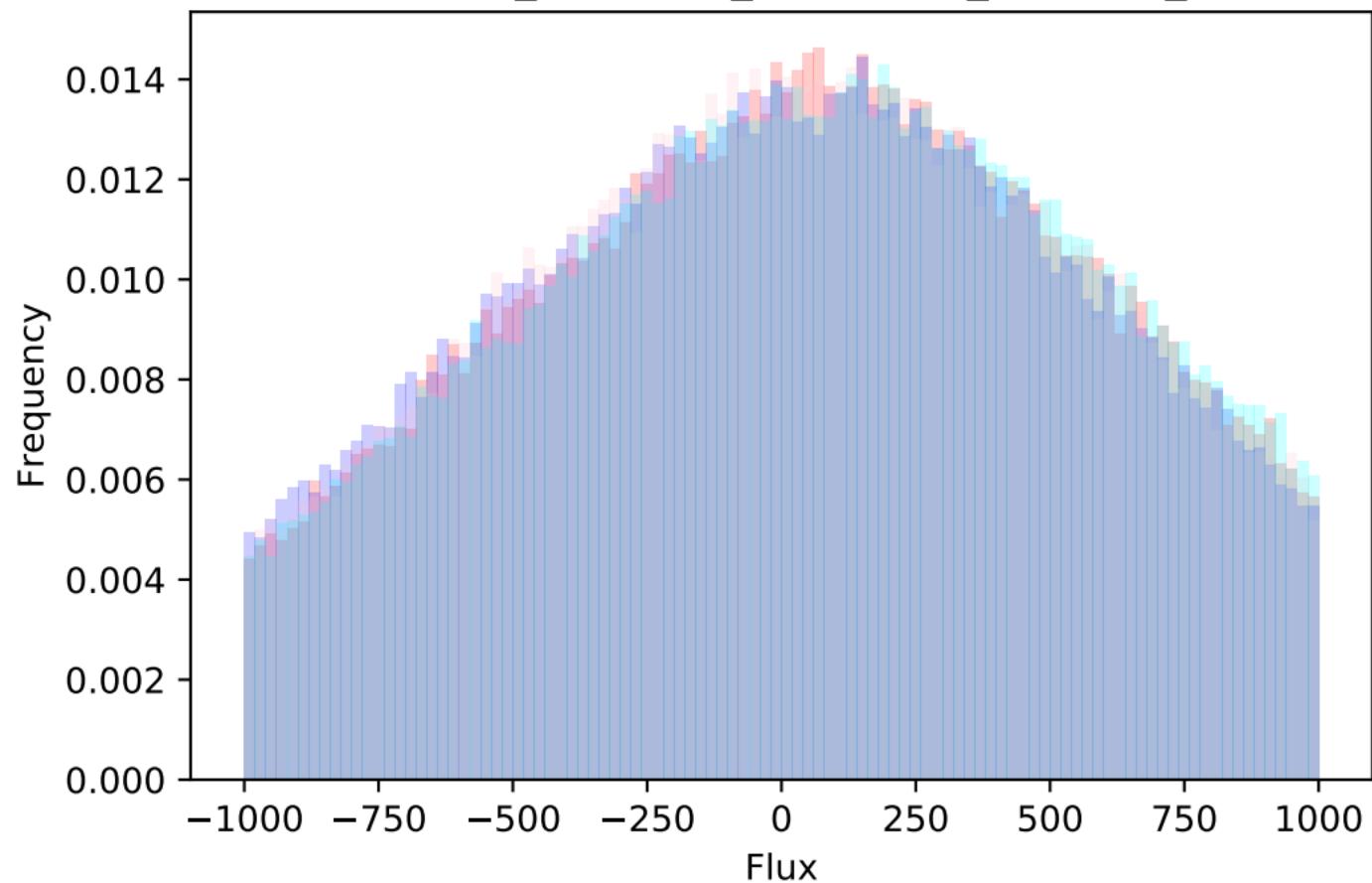
347 : Mal\_c + iCit\_m <=> Mal\_m + iCit\_c



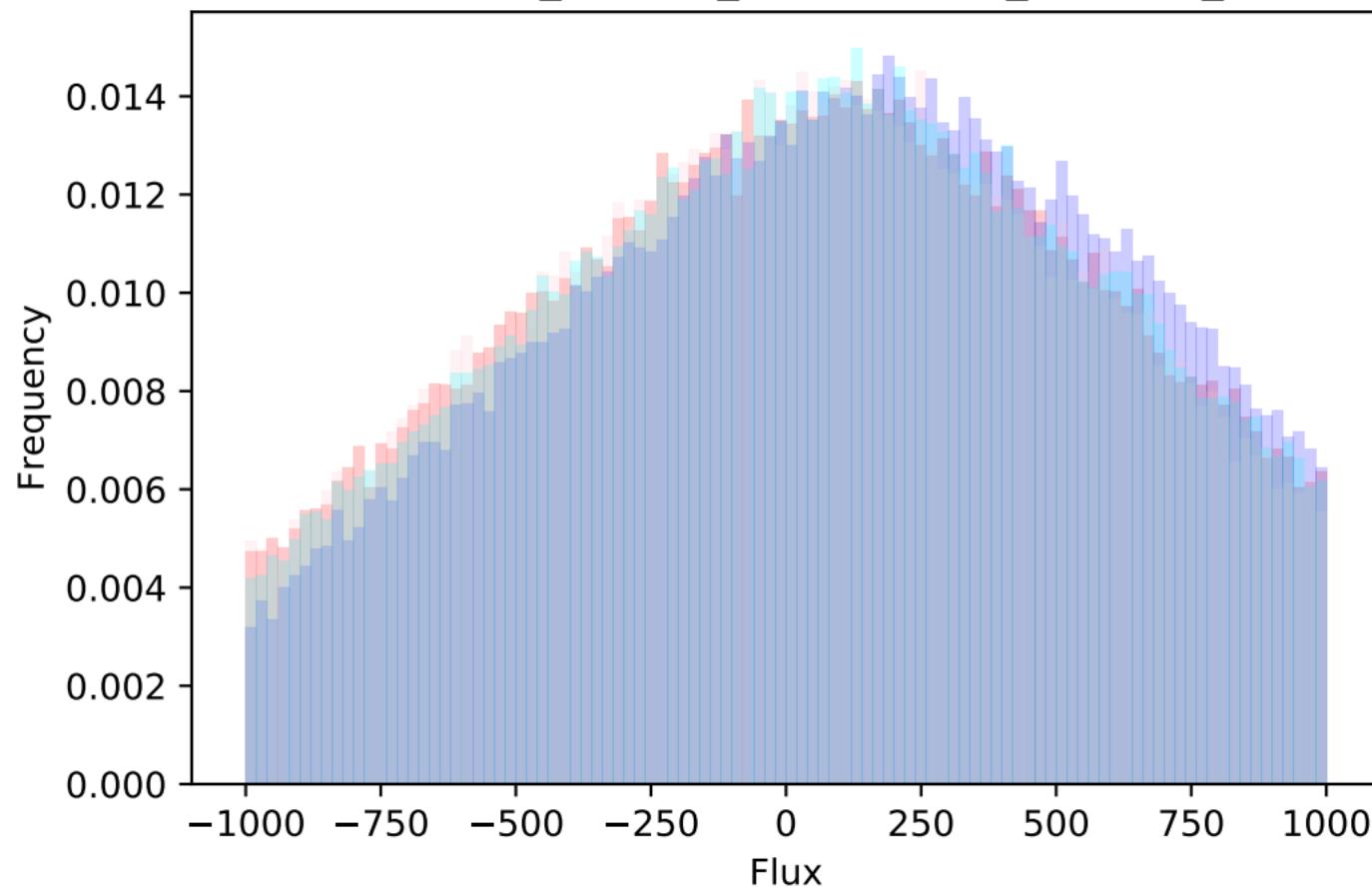
348 : Mal\_c + cACN\_m <=> Mal\_m + cACN\_c



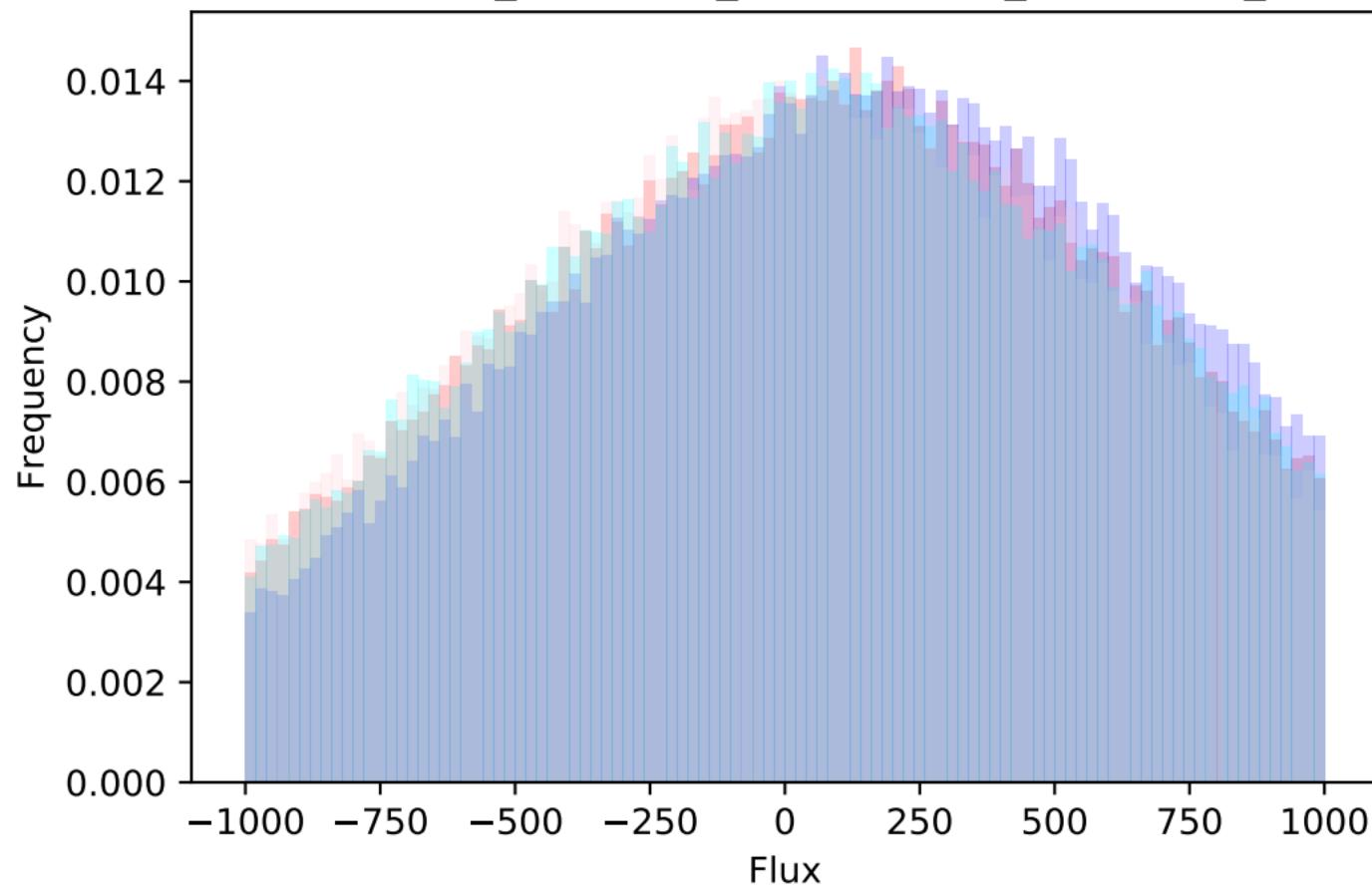
349 : Cit\_m + OAA\_c <=> Cit\_c + OAA\_m



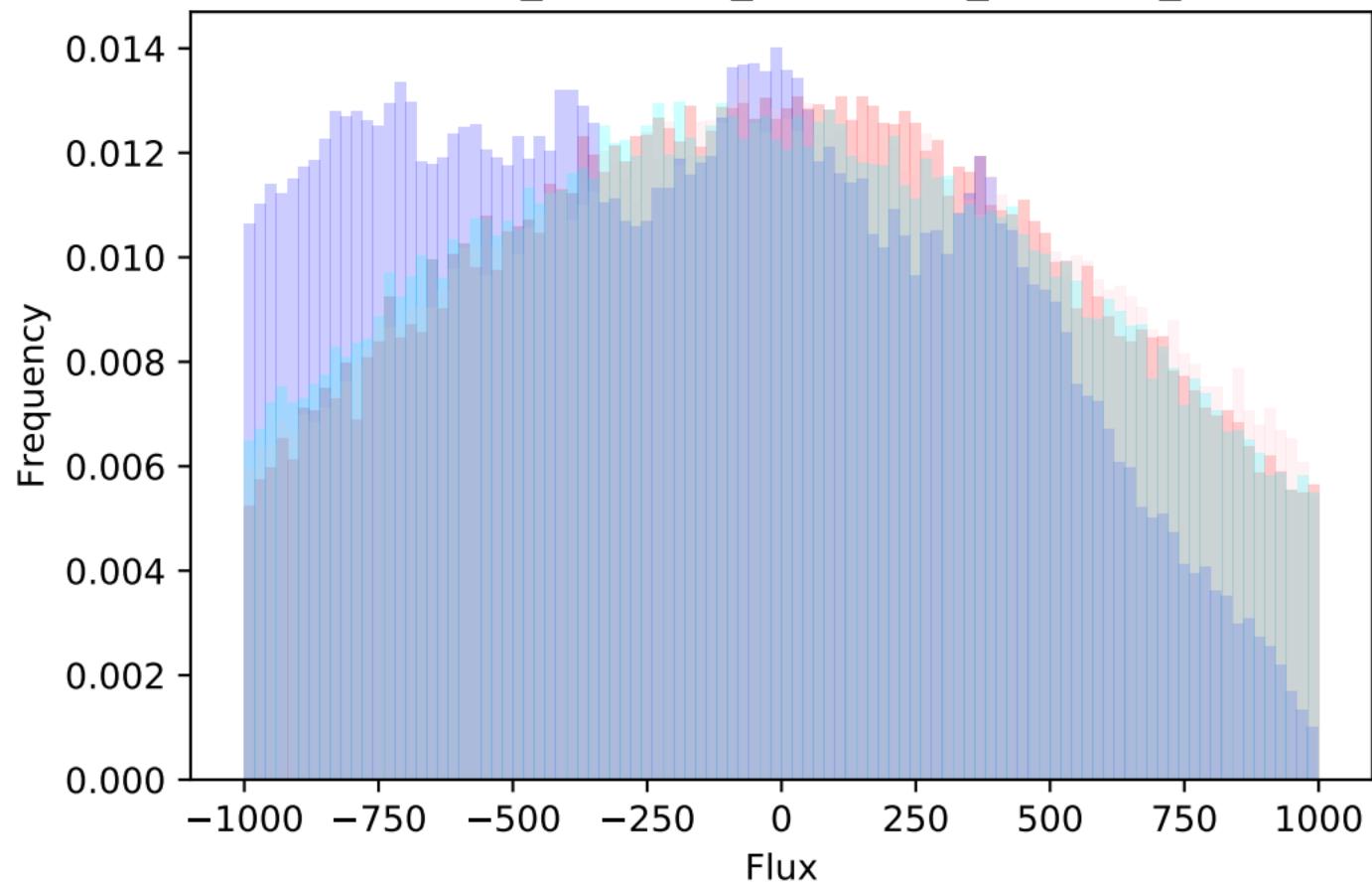
350 : OAA\_c + iCit\_m <=> OAA\_m + iCit\_c



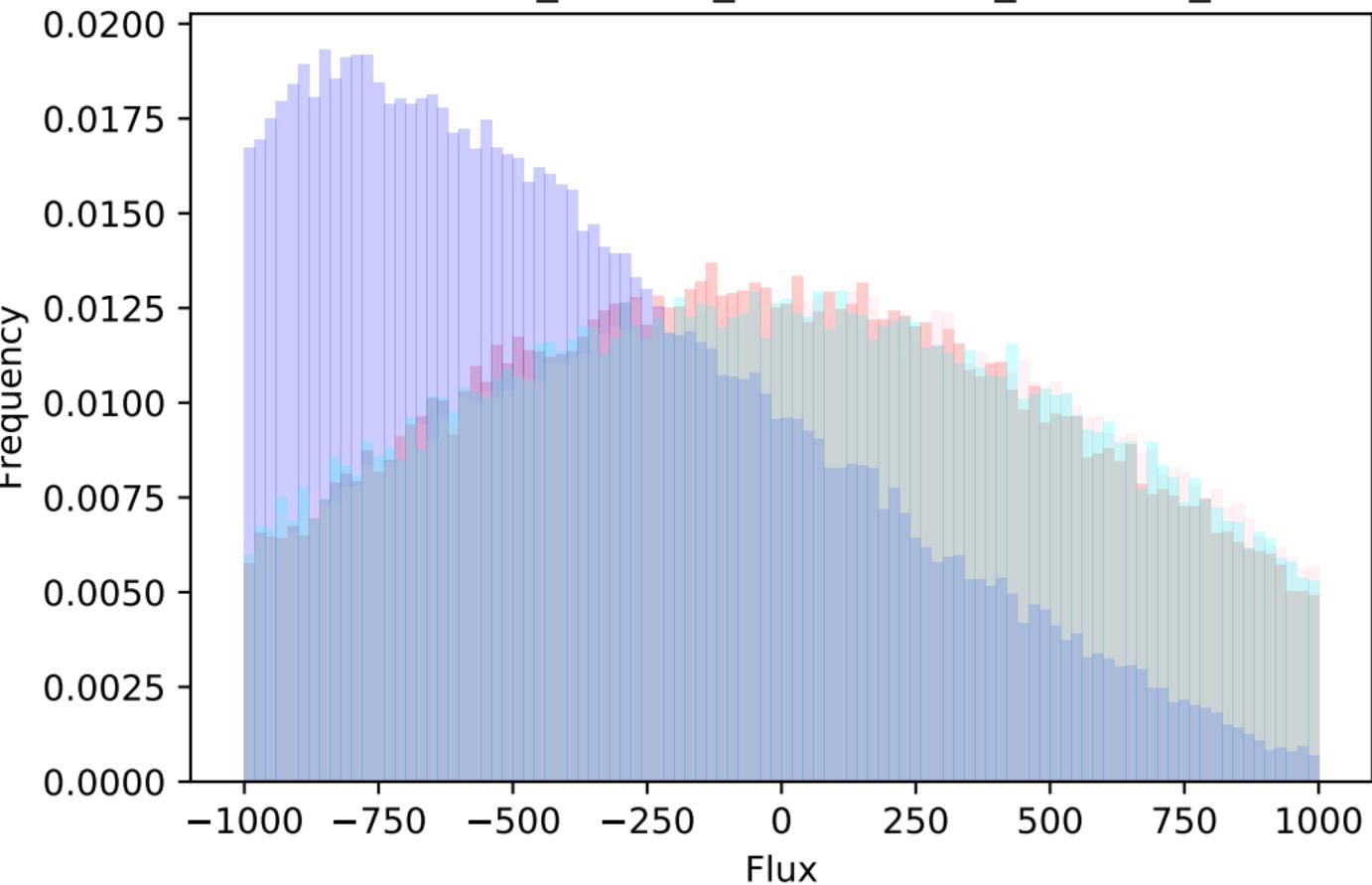
351 : OAA\_c + cACN\_m <=> OAA\_m + cACN\_c



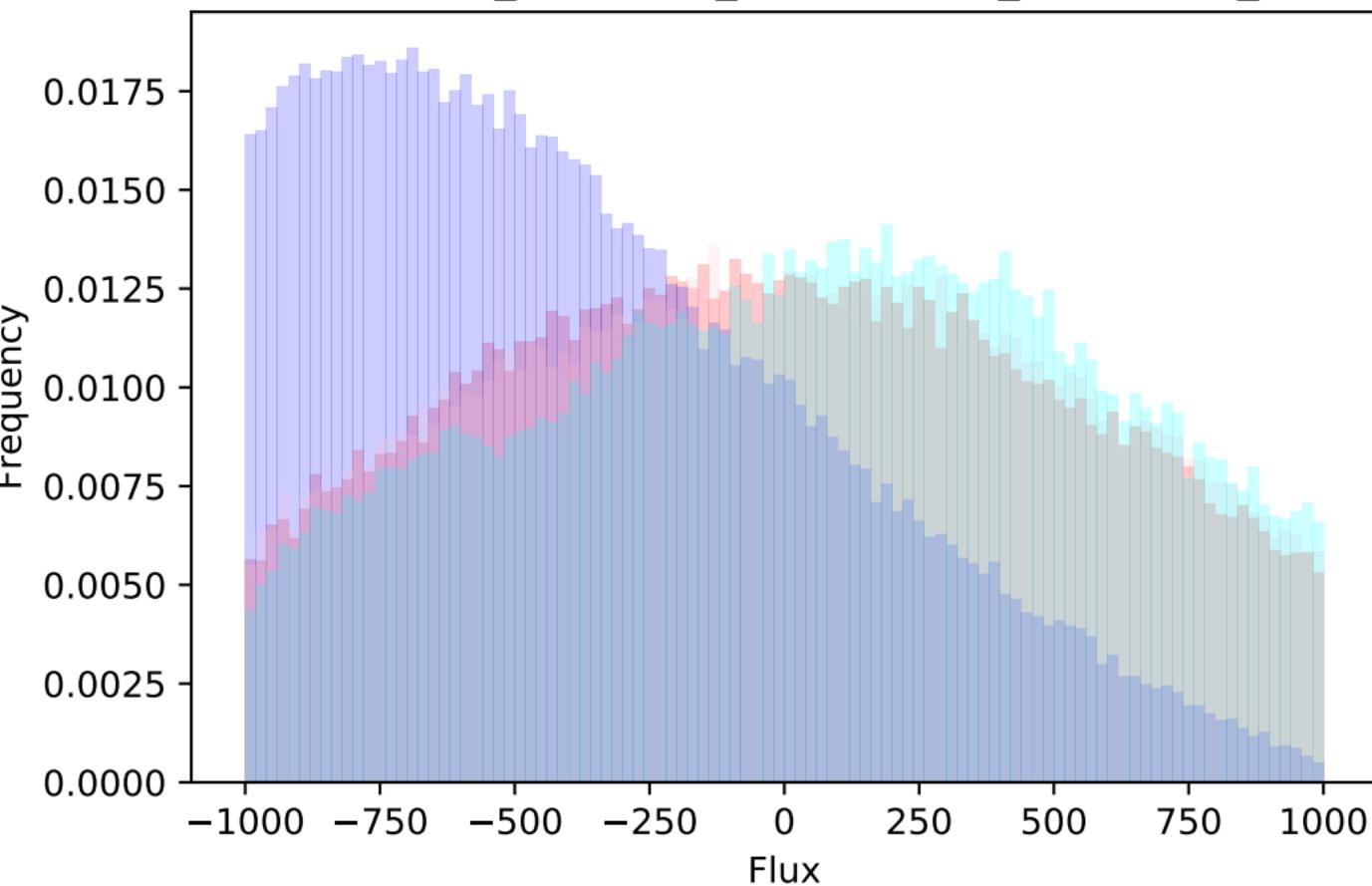
352 : Cit\_m + SCA\_c <=> Cit\_c + SCA\_m



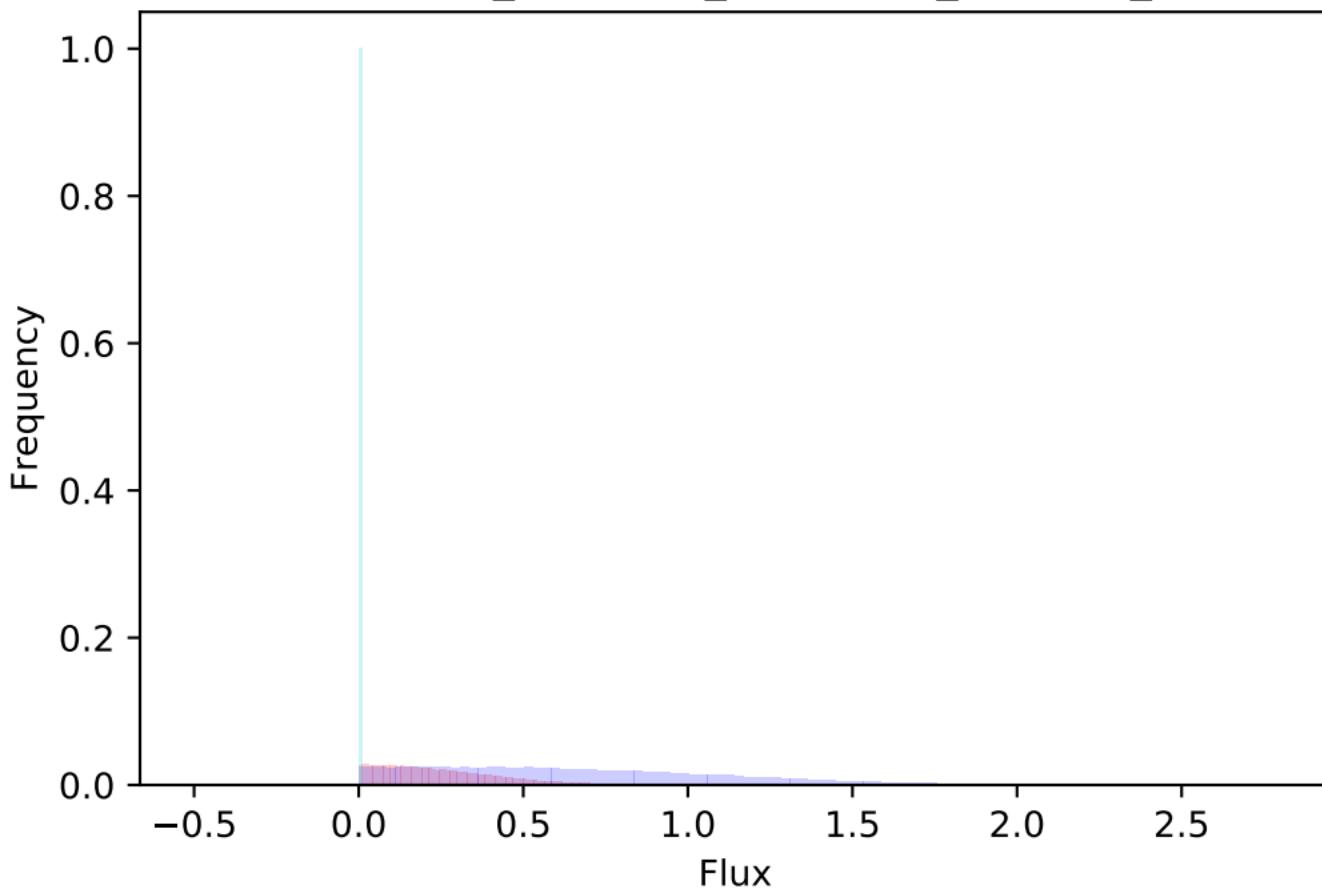
353 : SCA\_c + iCit\_m <=> SCA\_m + iCit\_c



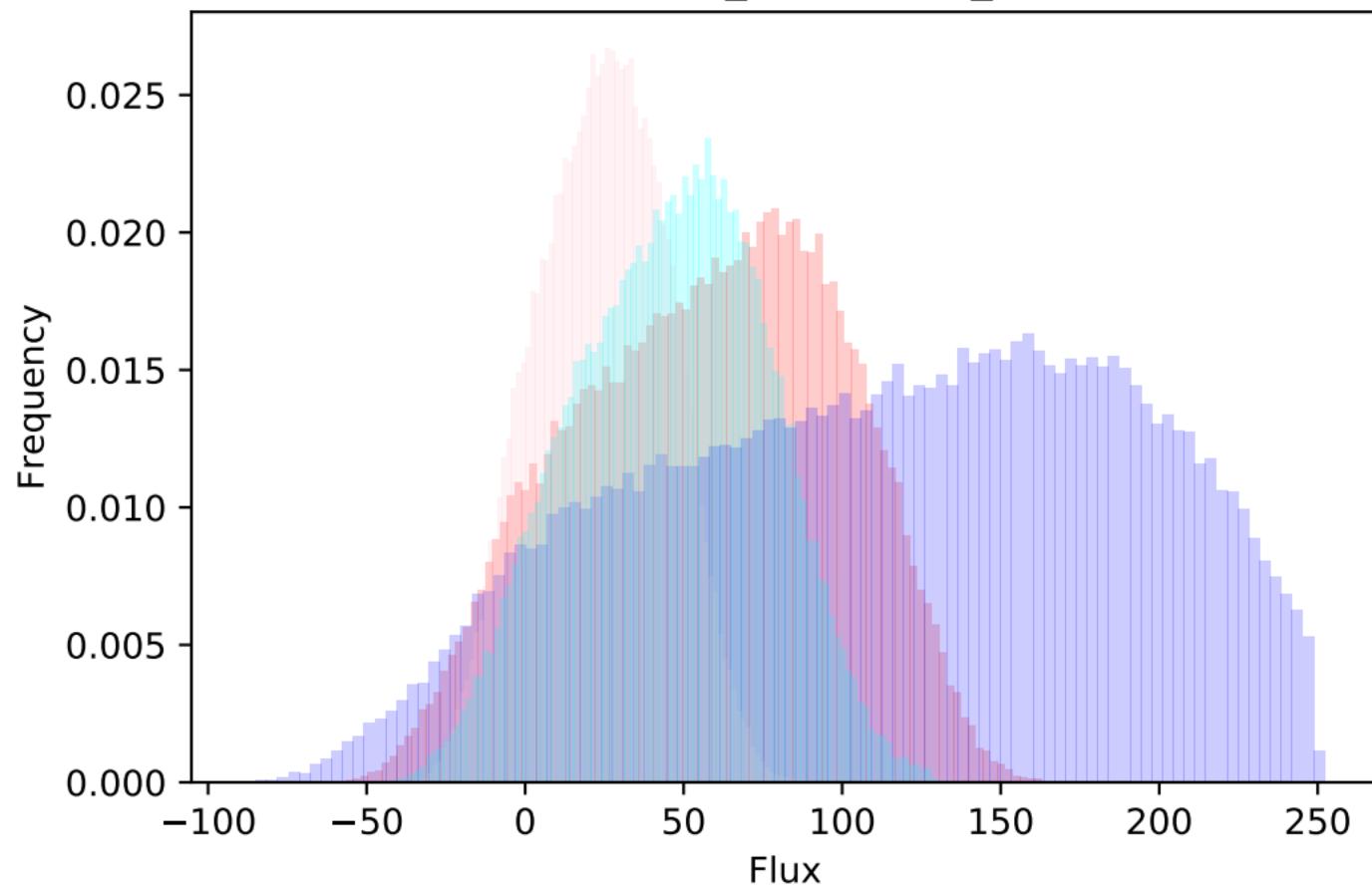
354 : SCA\_c + cACN\_m <=> SCA\_m + cACN\_c



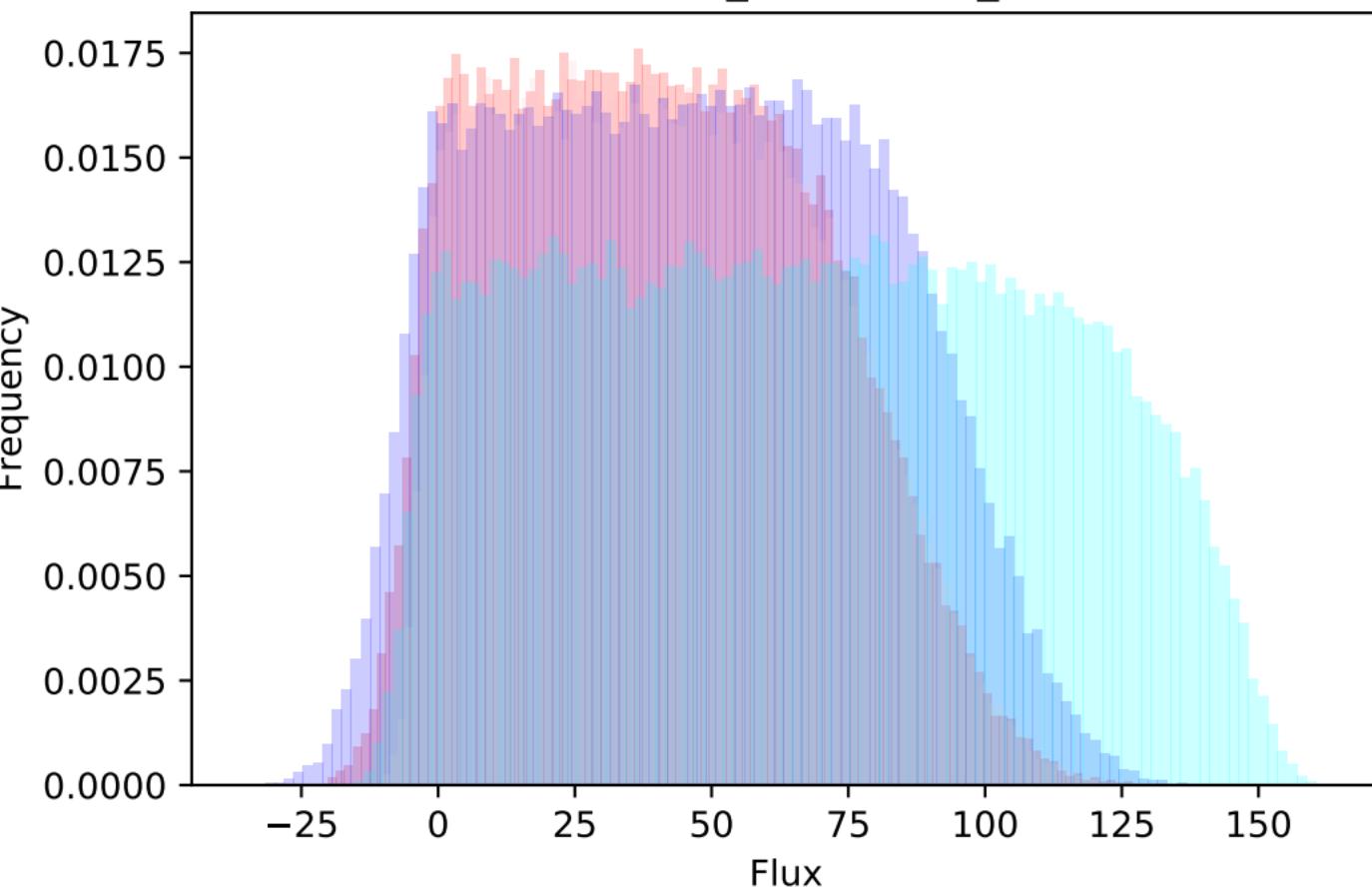
355 : Fum\_m + SCA\_c --> Fum\_c + SCA\_m



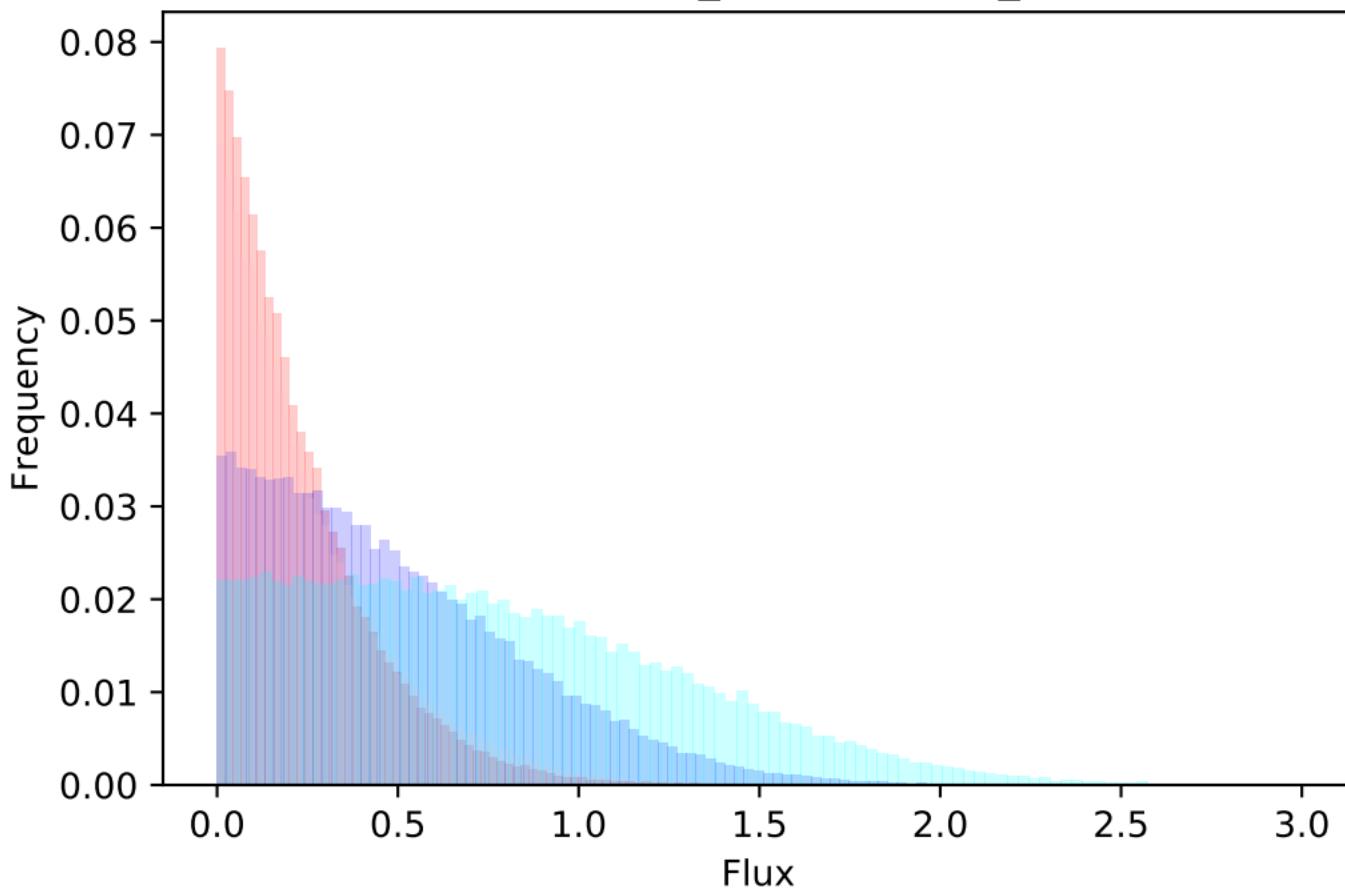
356 : Ala\_c <=> Ala\_m



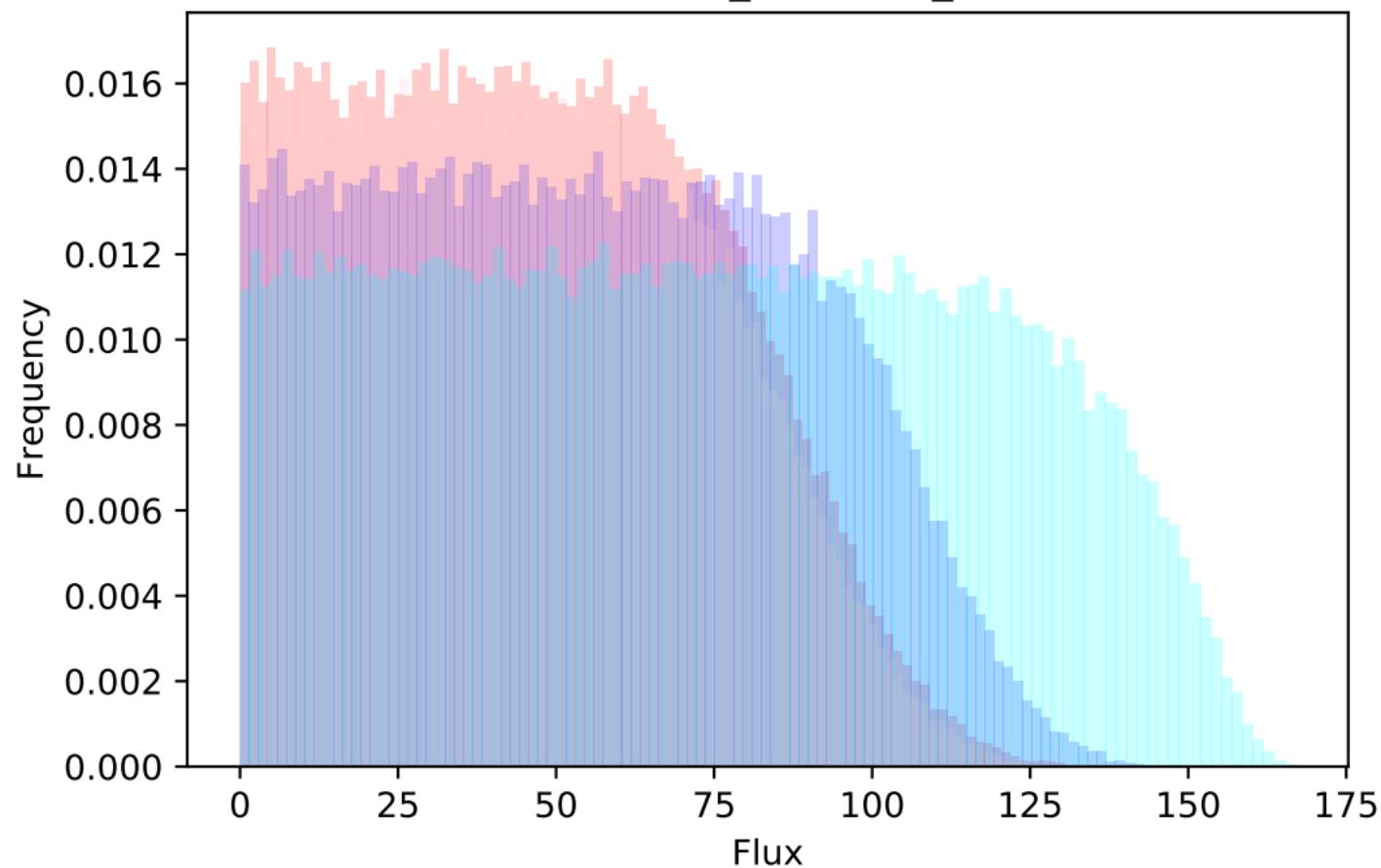
358 : Glu\_c <=> Glu\_m



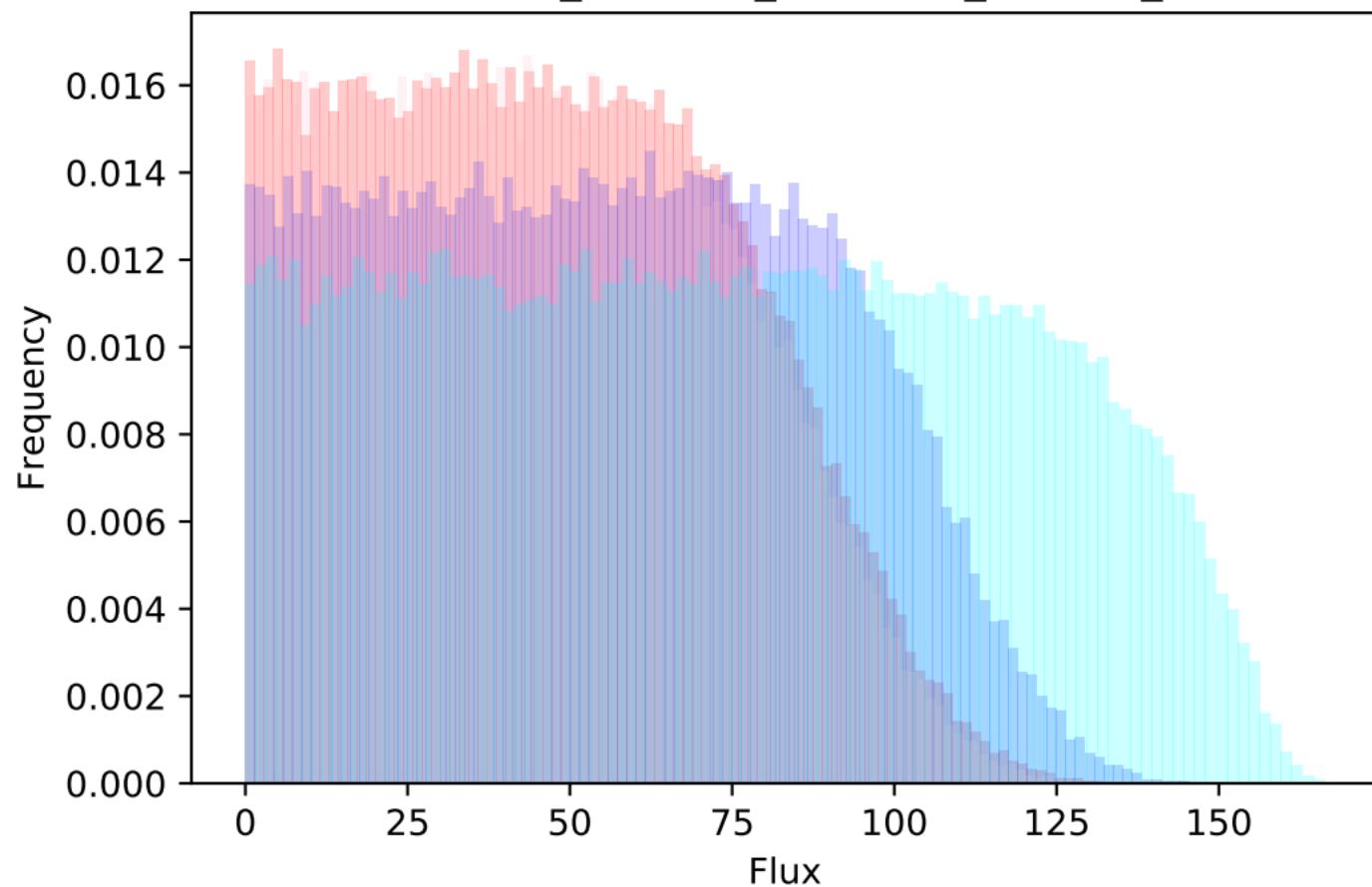
360 : GABA\_c <=> GABA\_m



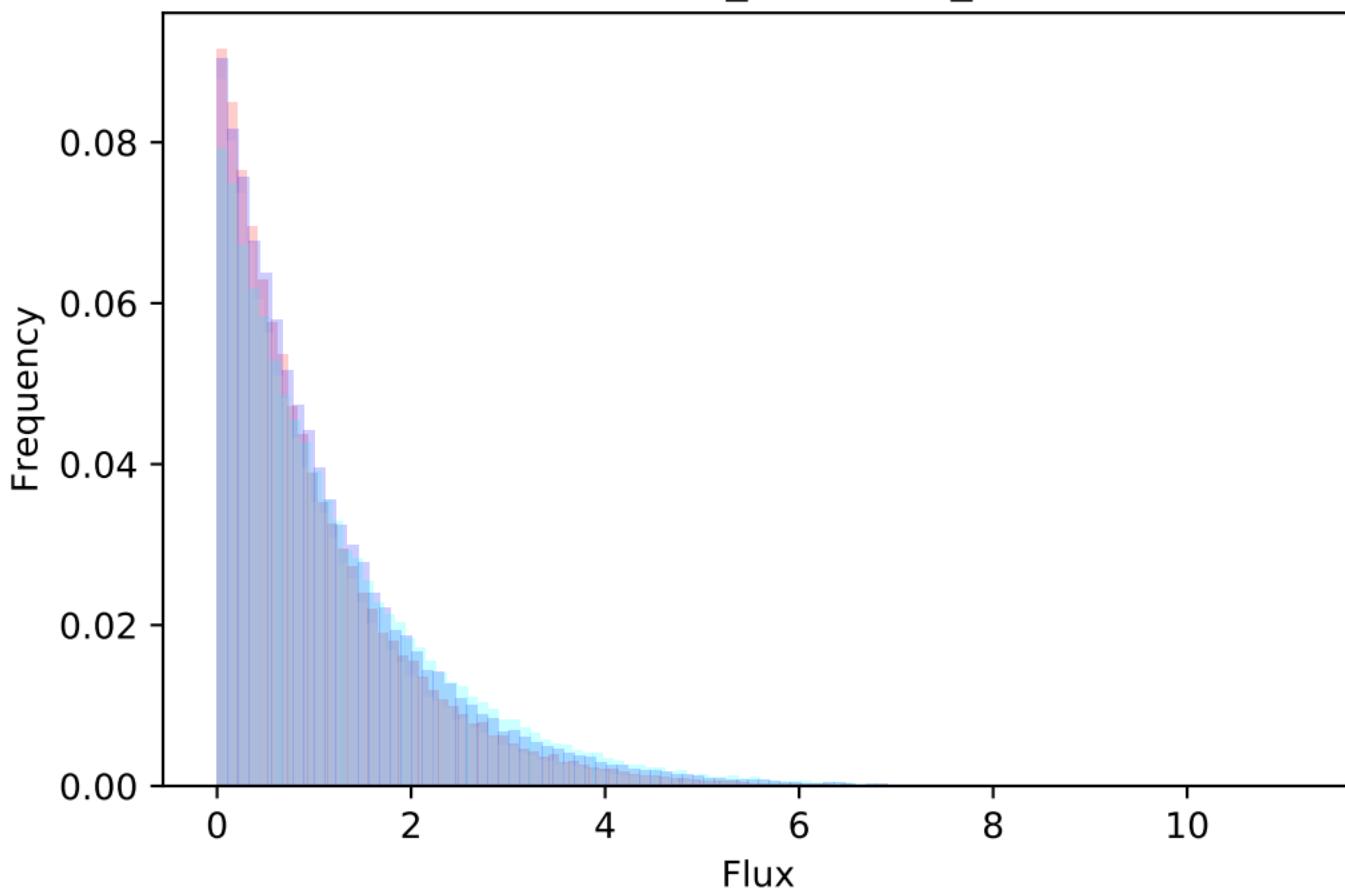
363 : Pro\_c --> Pro\_m



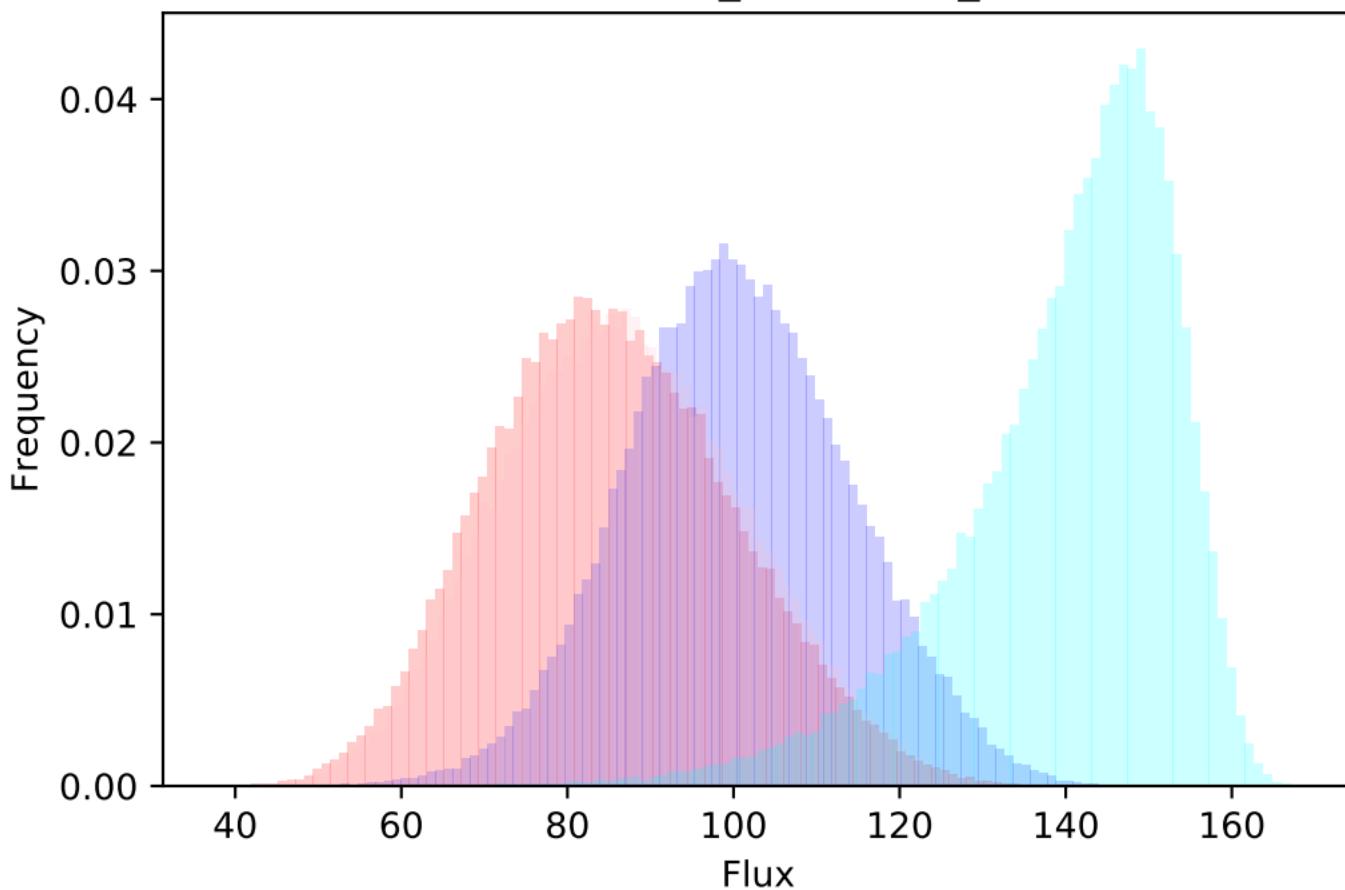
364 : Glu\_m + Pro\_c  $\rightarrow$  Glu\_c + Pro\_m



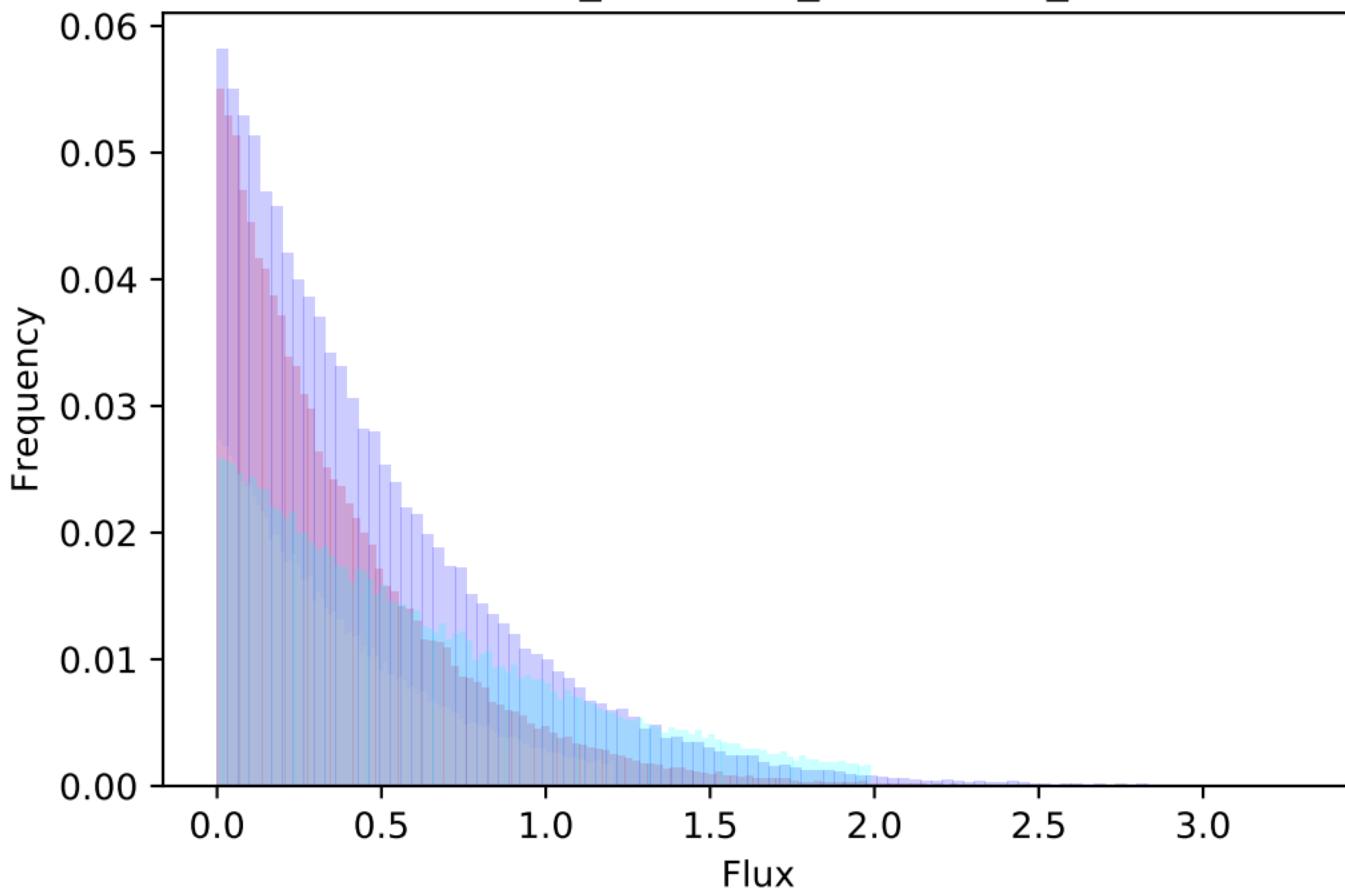
365 : P5C\_h --> P5C\_c



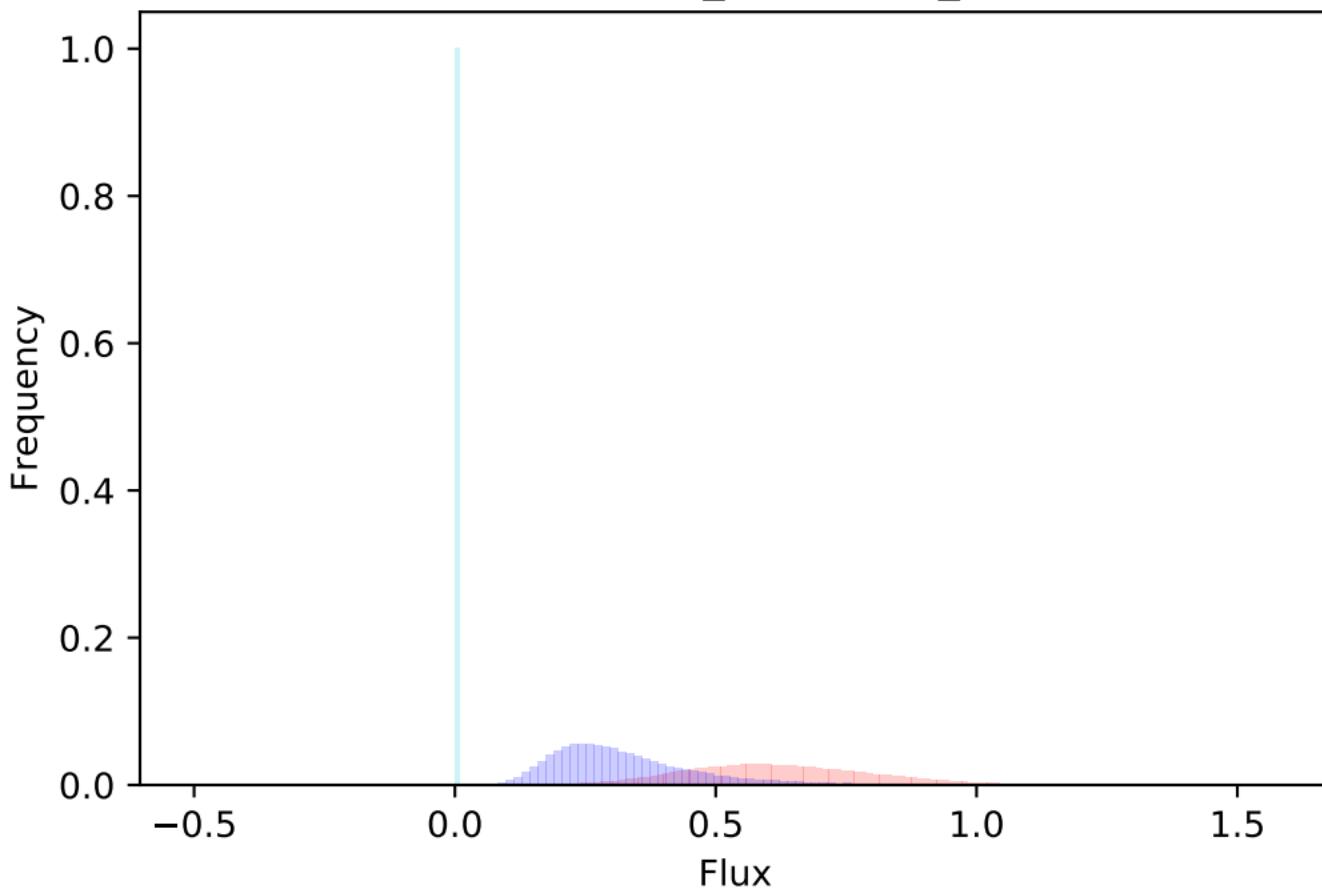
366 : P5C\_m --> P5C\_c



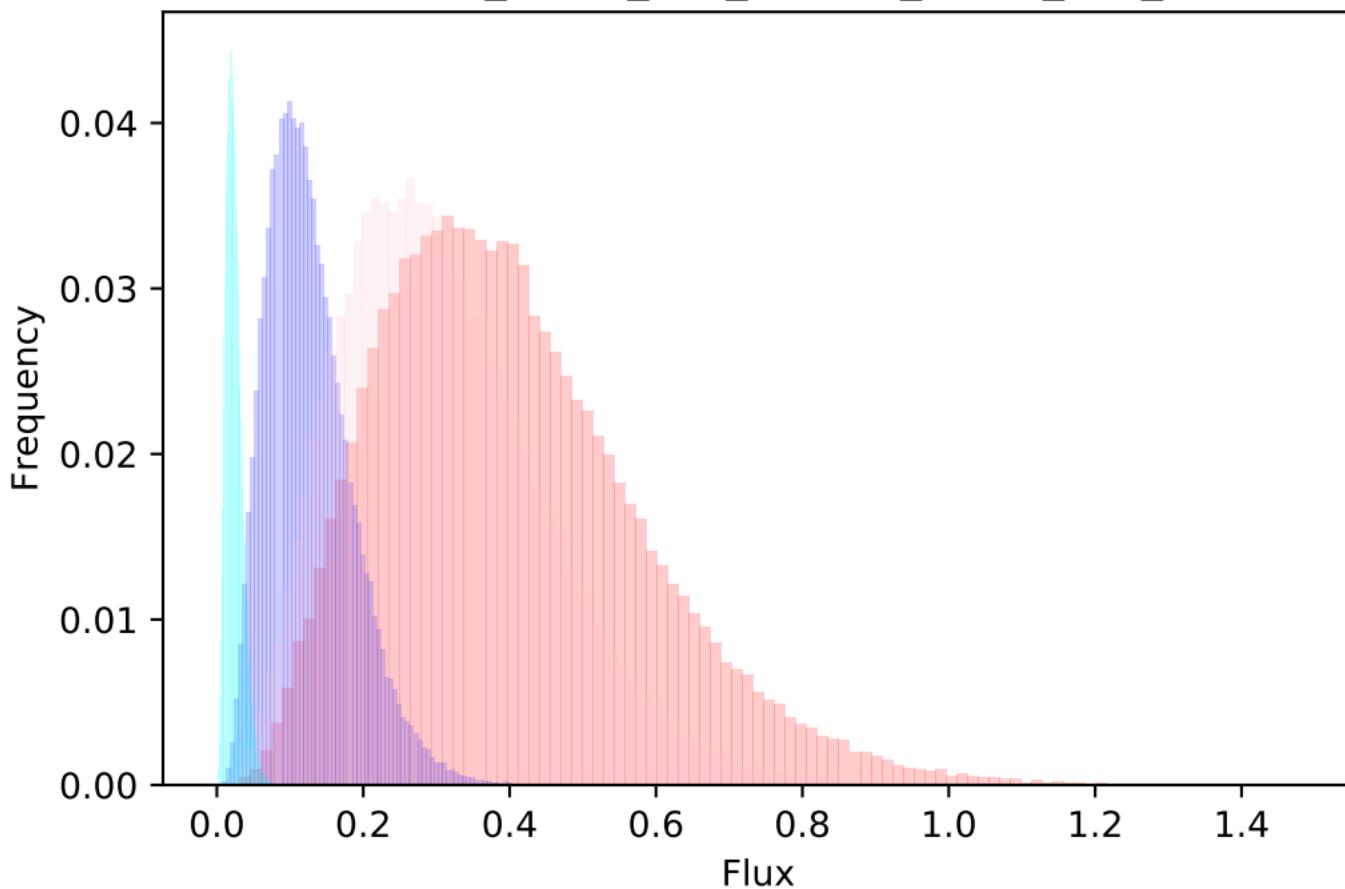
367 : H\_h + PRPP\_h --> PRPP\_c



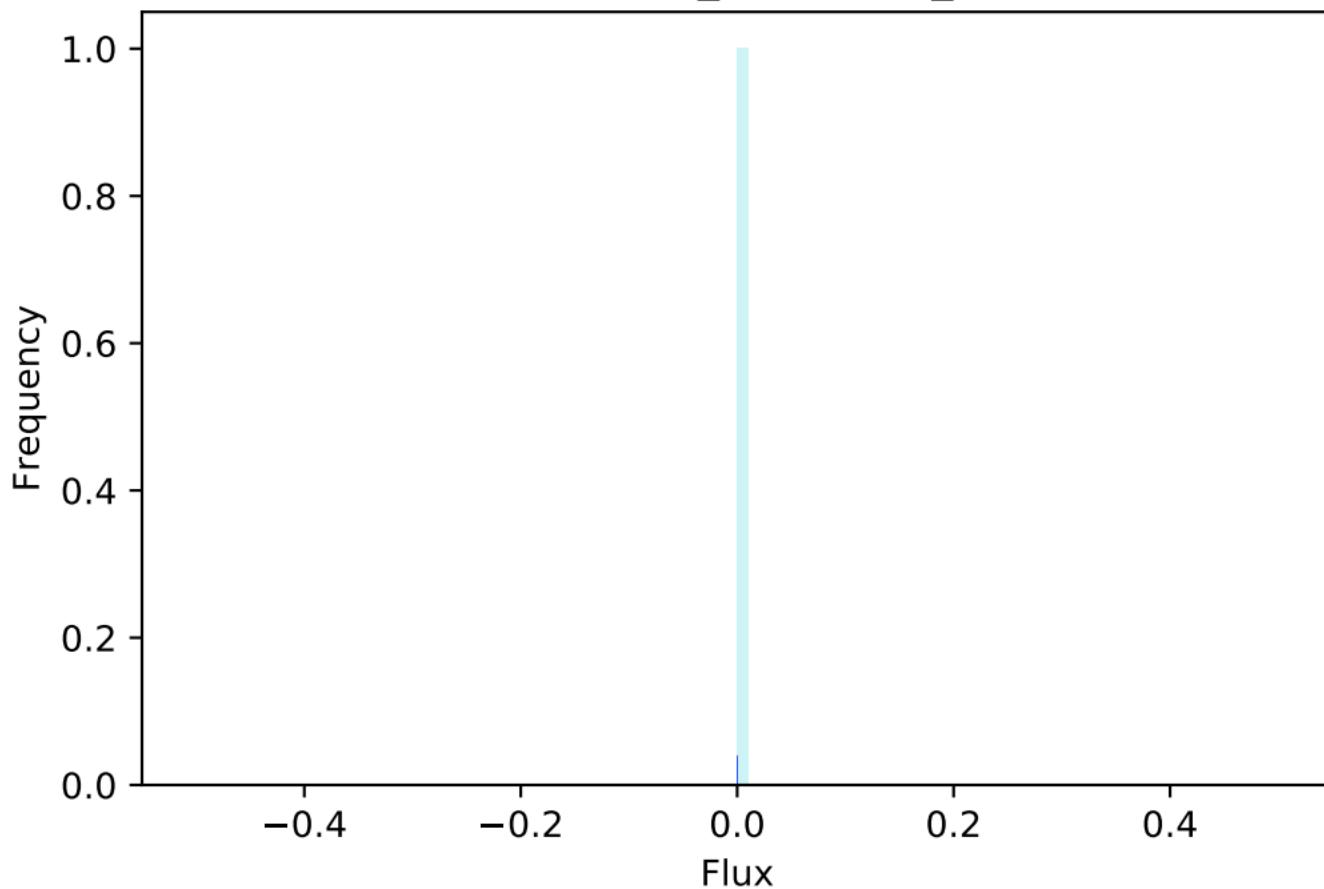
368 : Fum\_h --> Fum\_c



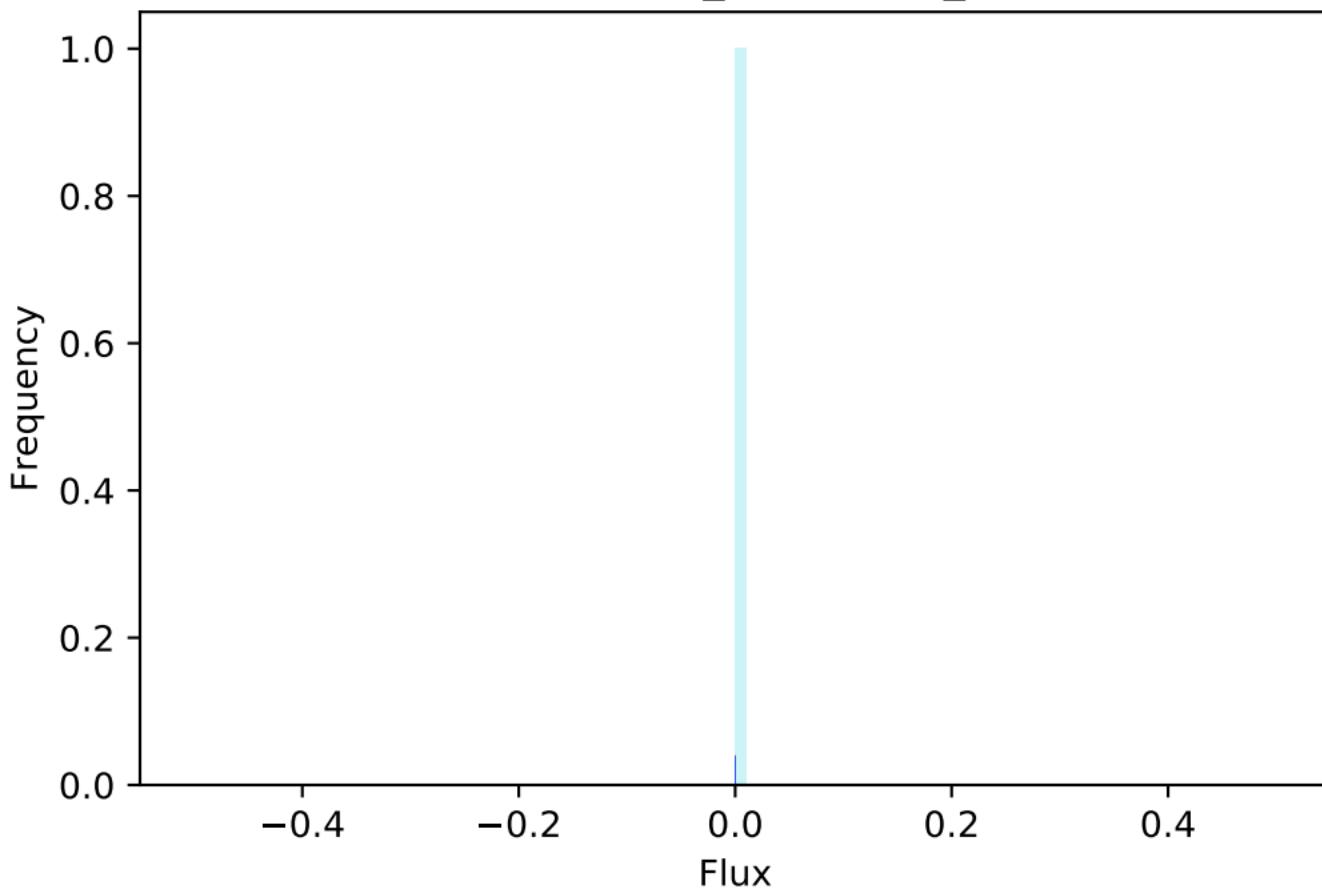
369 : H\_DASH\_Cys\_h --> H\_DASH\_Cys\_c



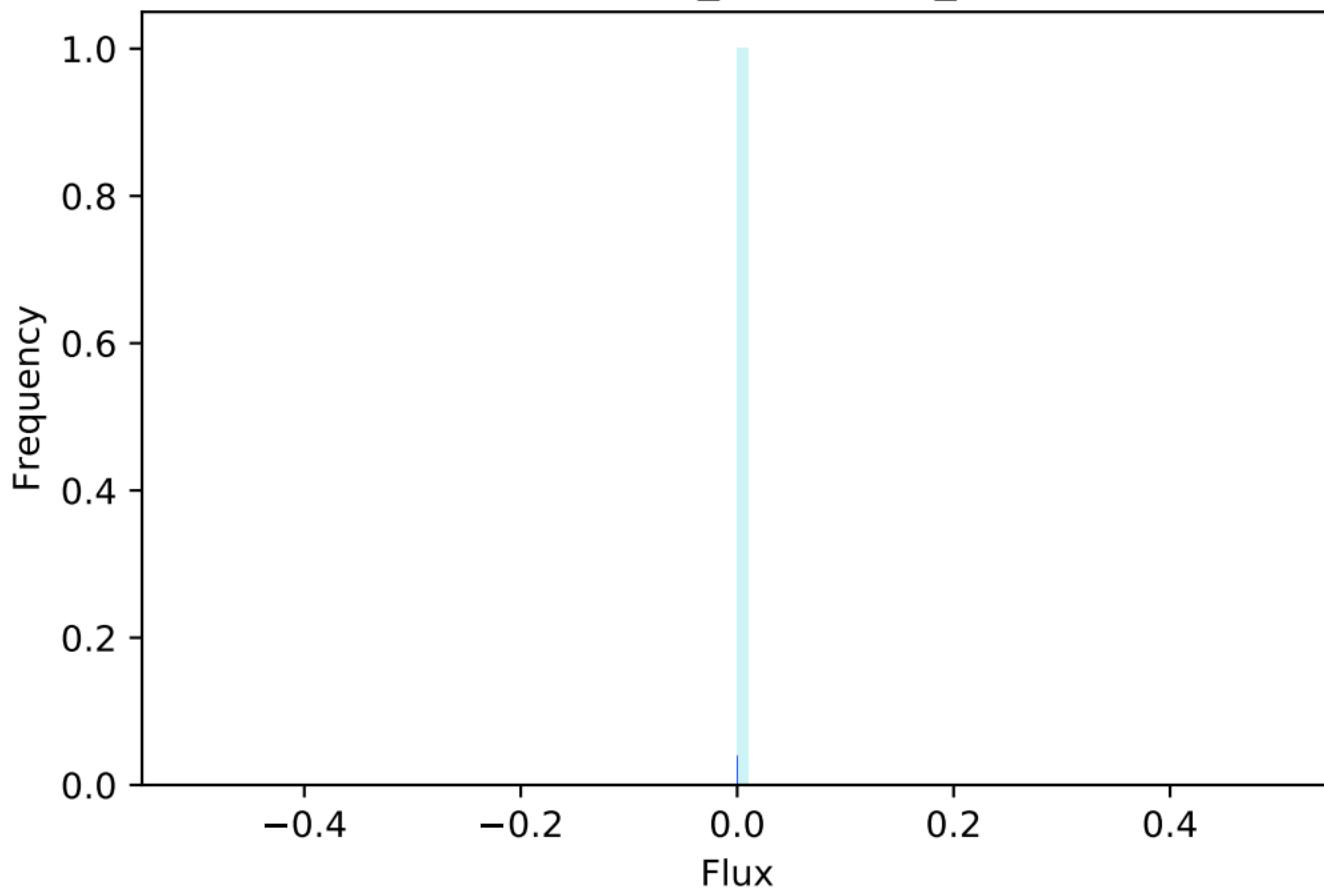
370 : orO\_m --> orO\_c



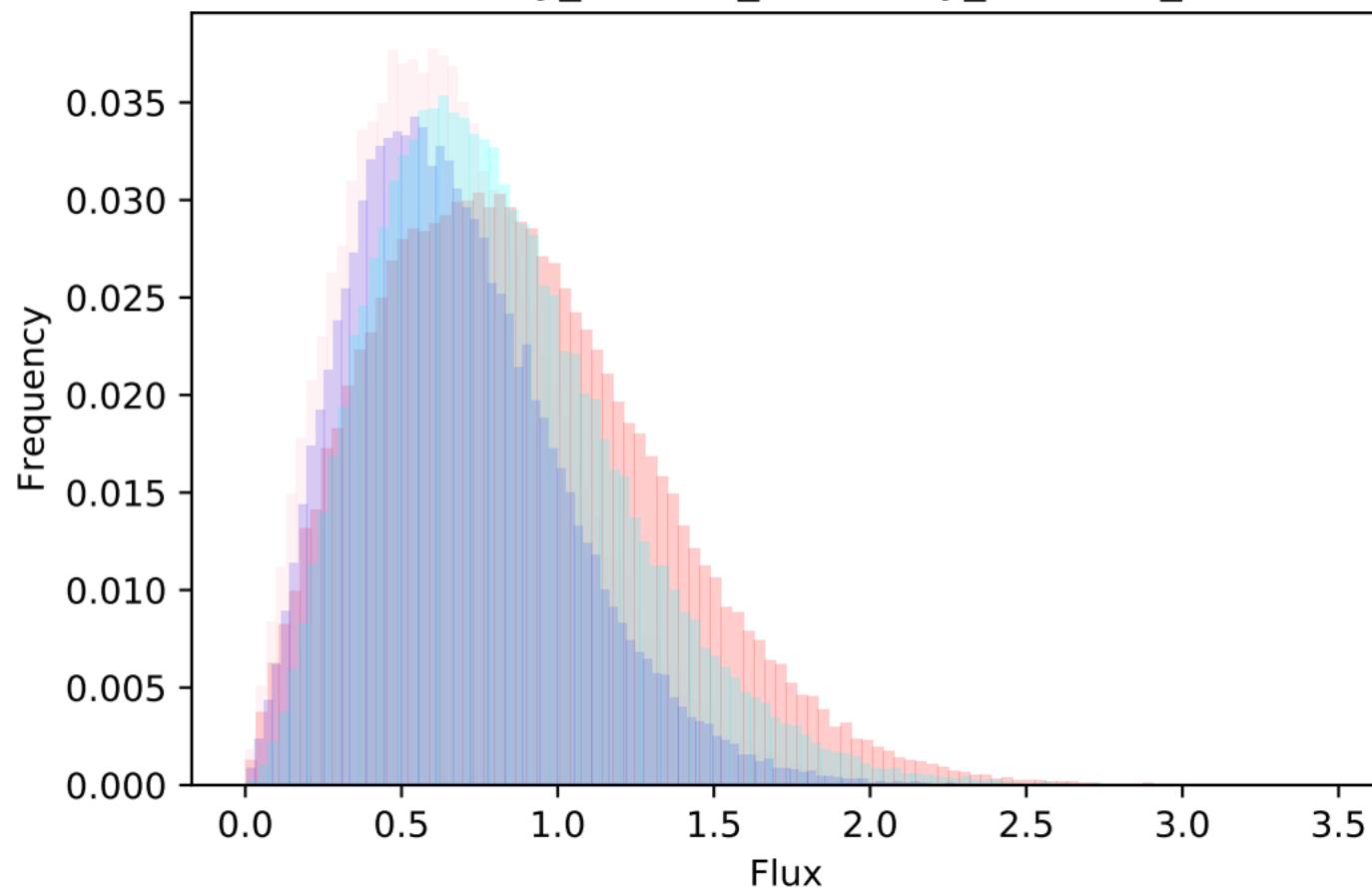
371 : DHO\_h --> DHO\_c



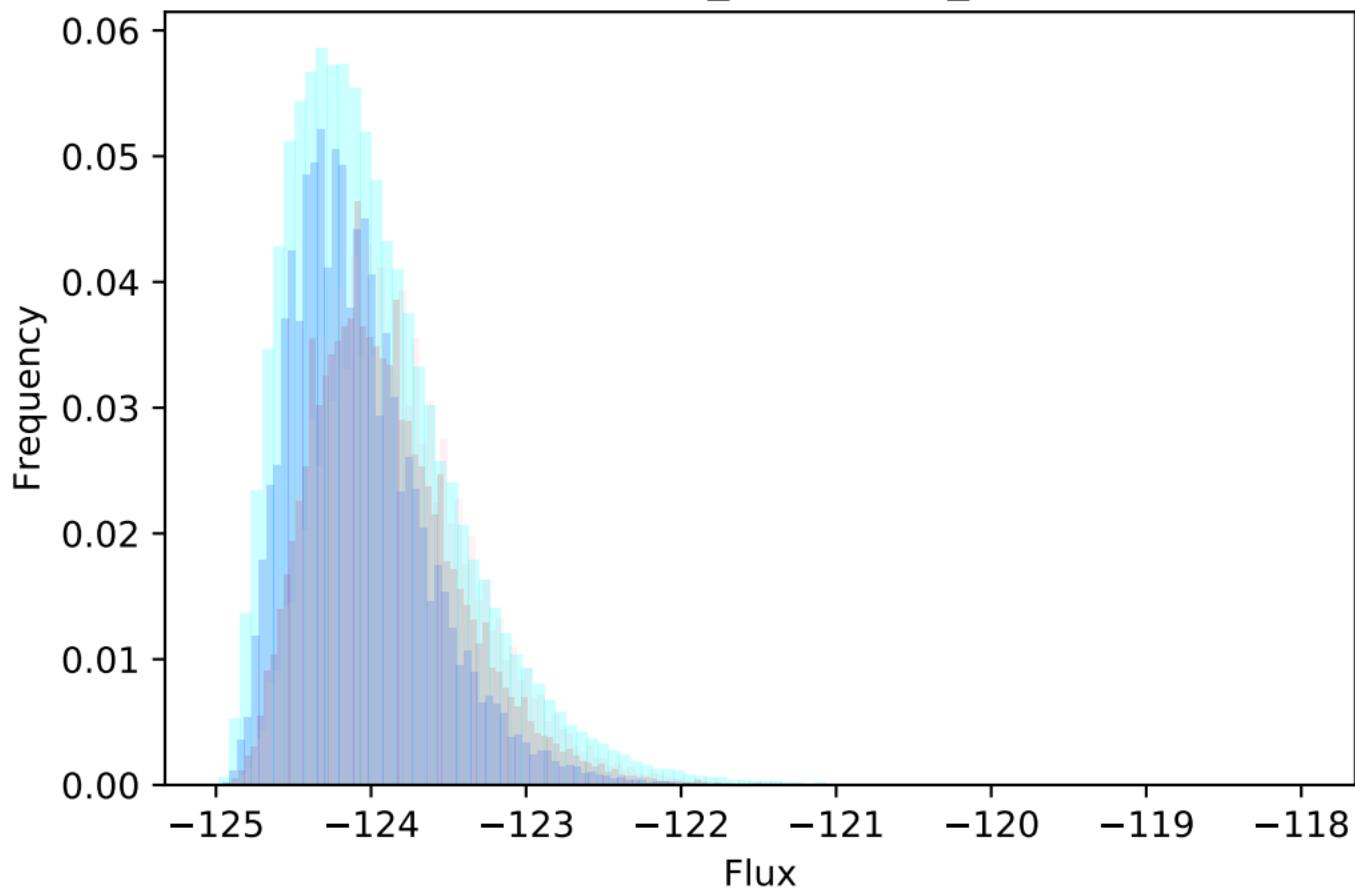
372 : DHO\_c --> DHO\_m



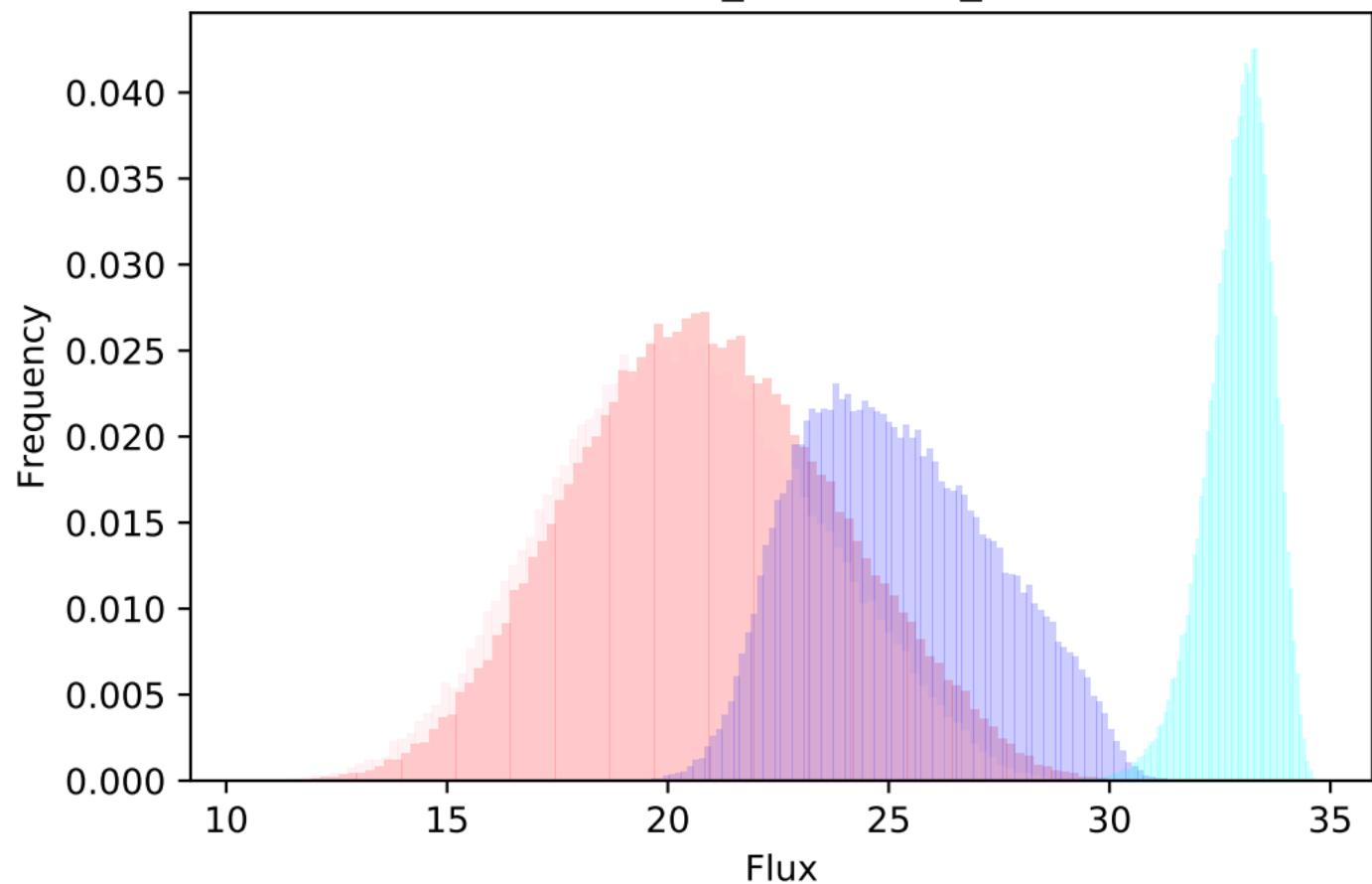
373 : Gly\_c + Ser\_m  $\rightarrow$  Gly\_m + Ser\_c



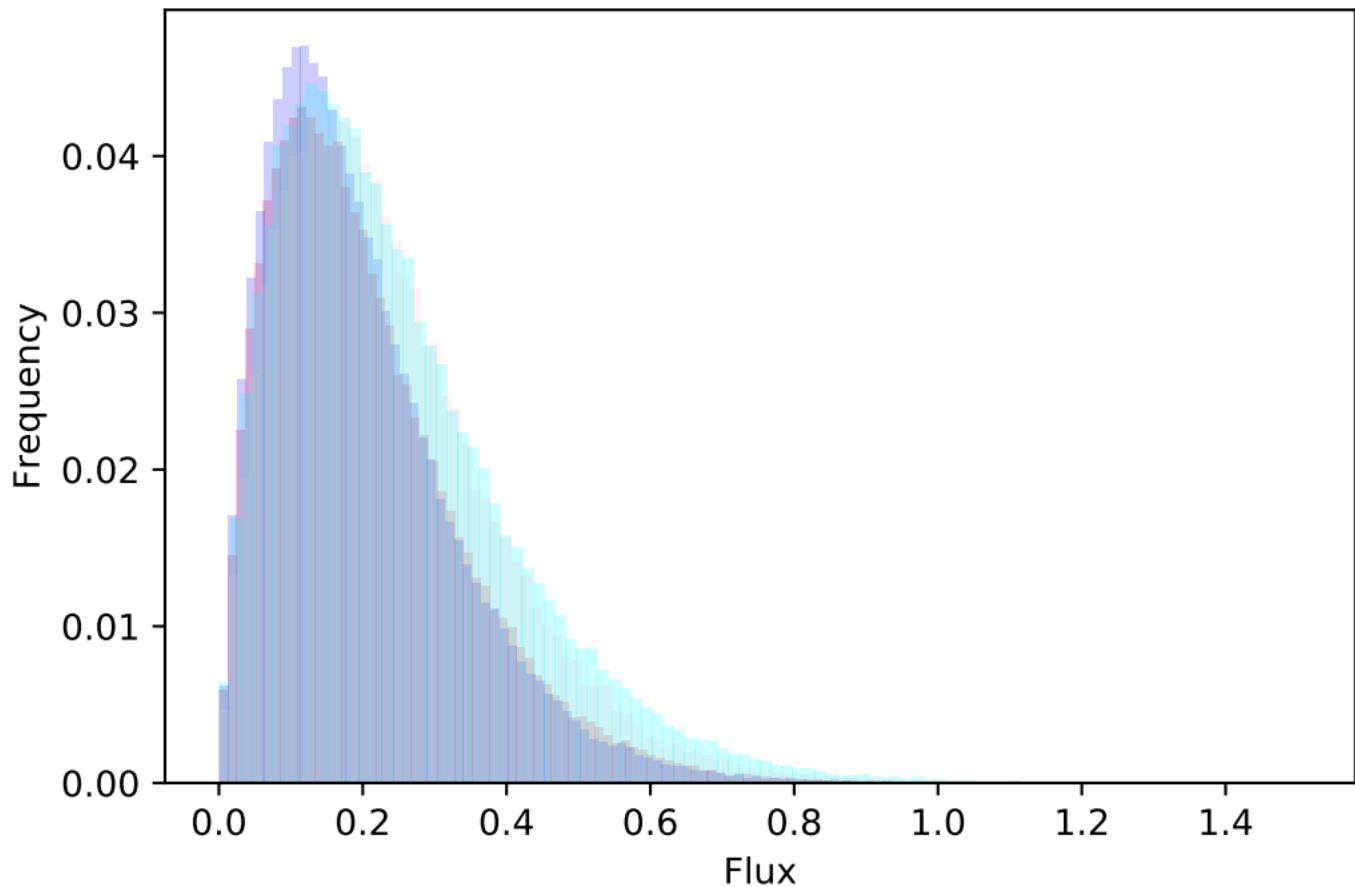
374 : O2\_c <=> O2\_h



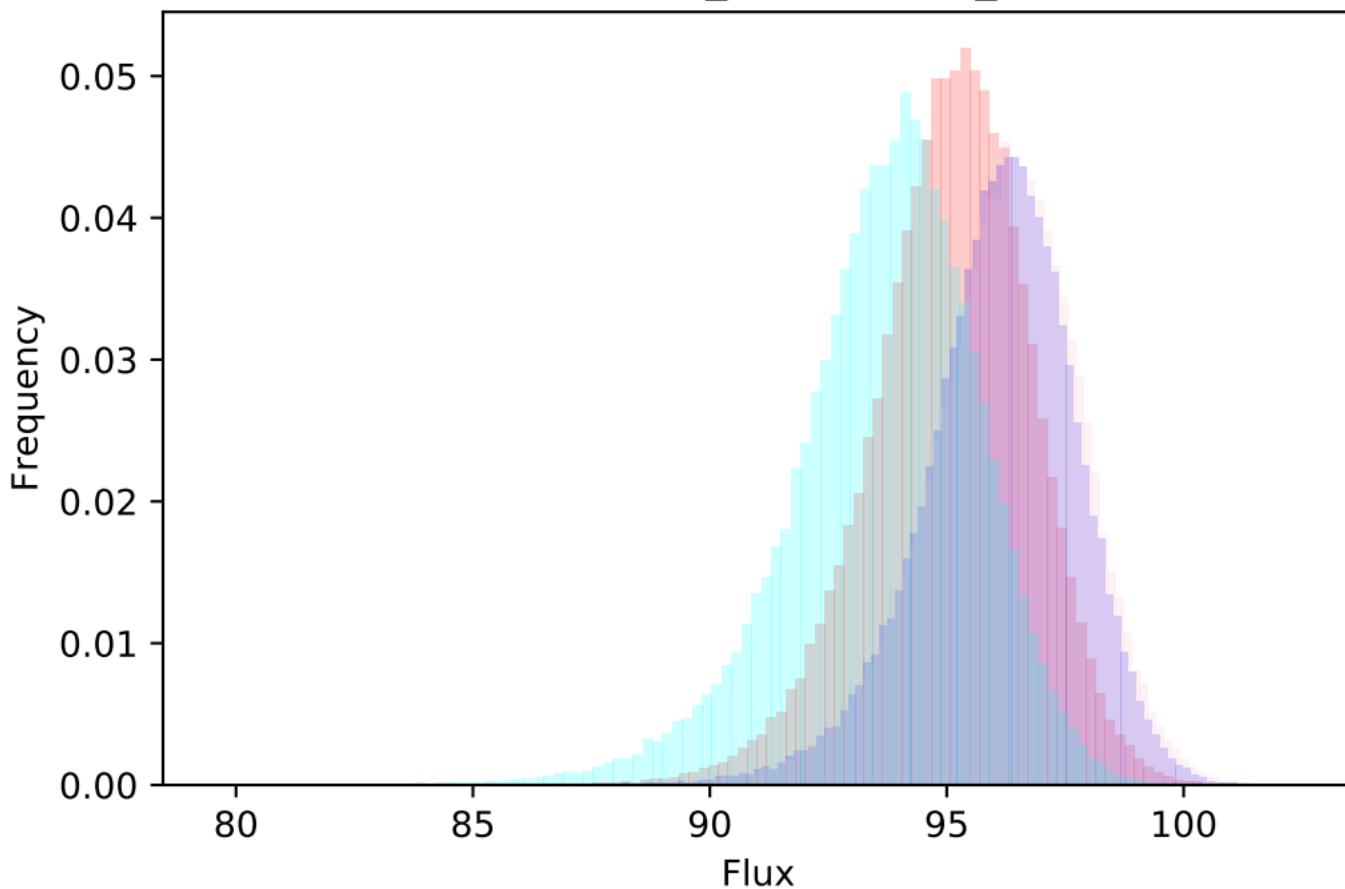
375 : O2\_c <=> O2\_m



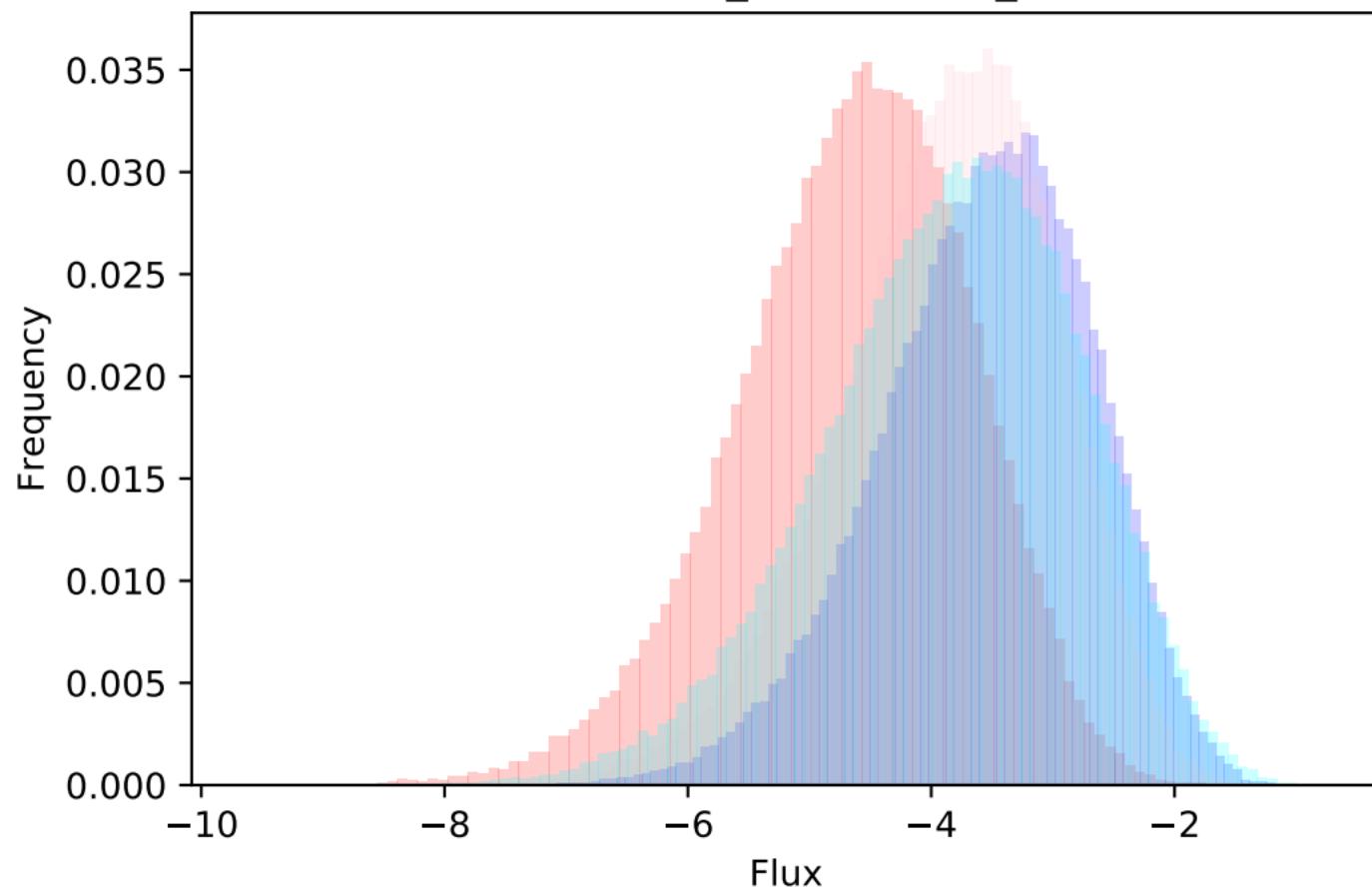
376 : O2\_c <=> O2\_p



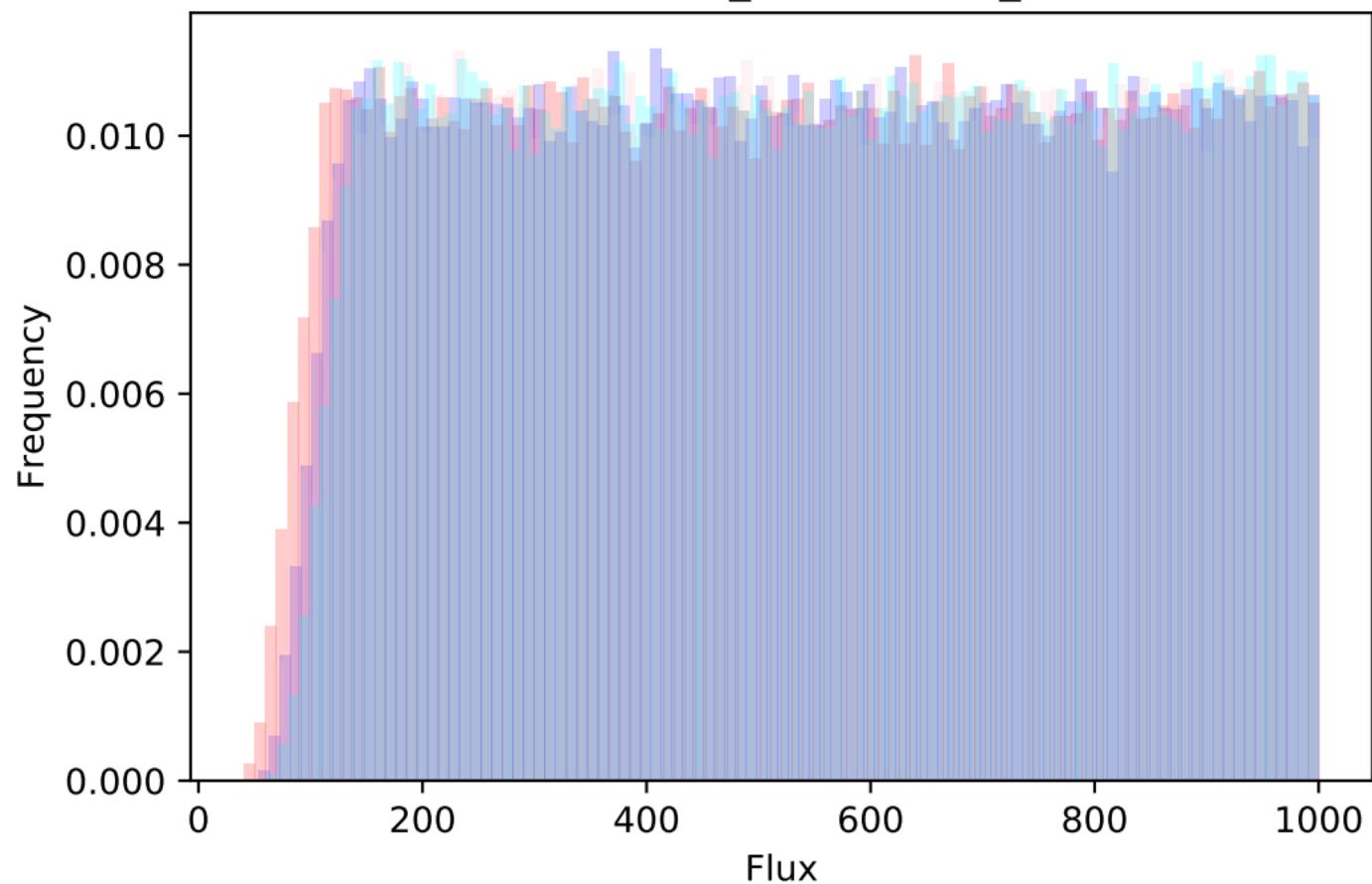
377 : CO2\_c <=> CO2\_h



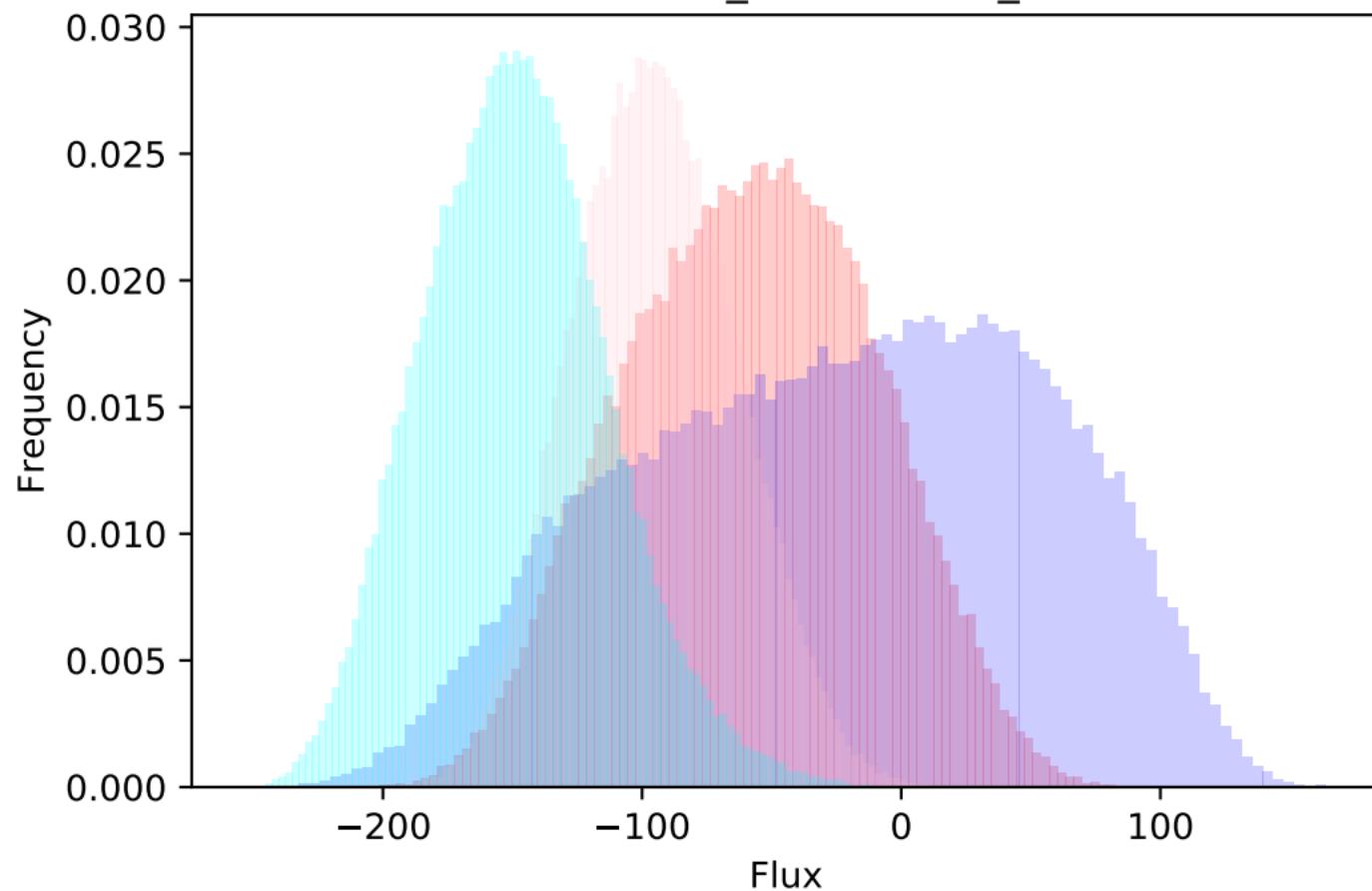
378 : CO<sub>2</sub>\_c <=> CO<sub>2</sub>\_m



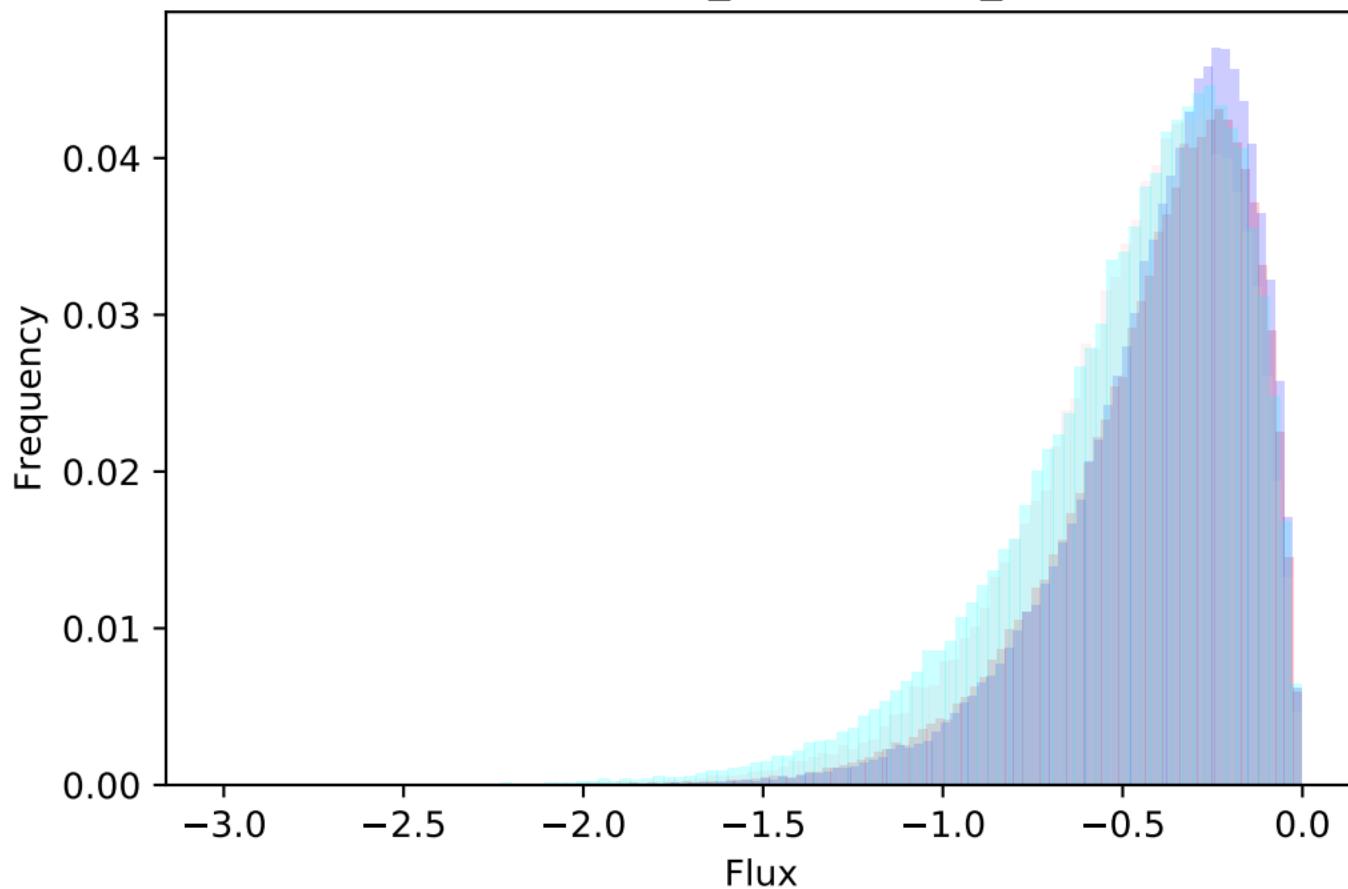
379 : H2O\_c <=> H2O\_h



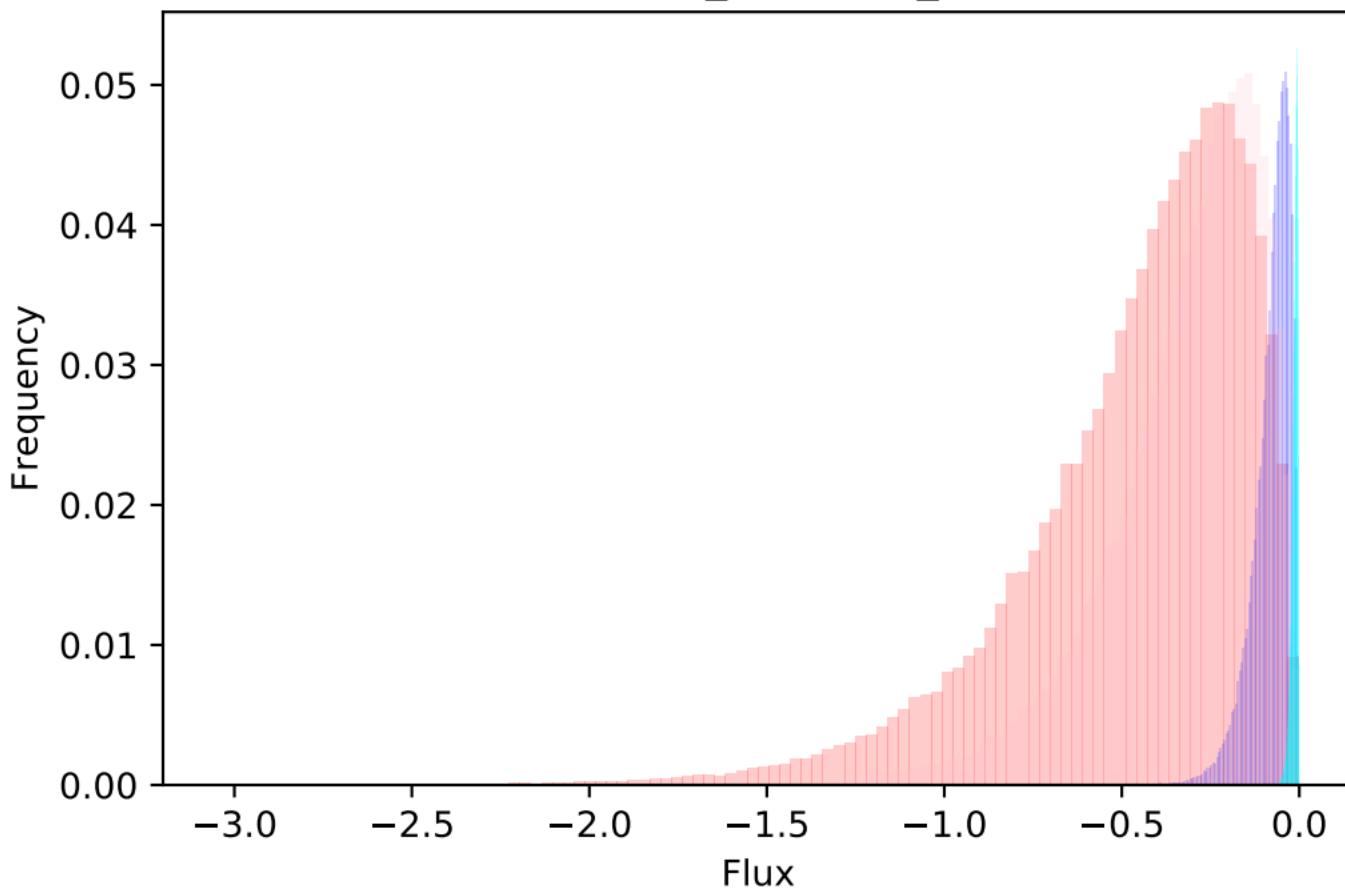
380 : H2O\_c <=> H2O\_m



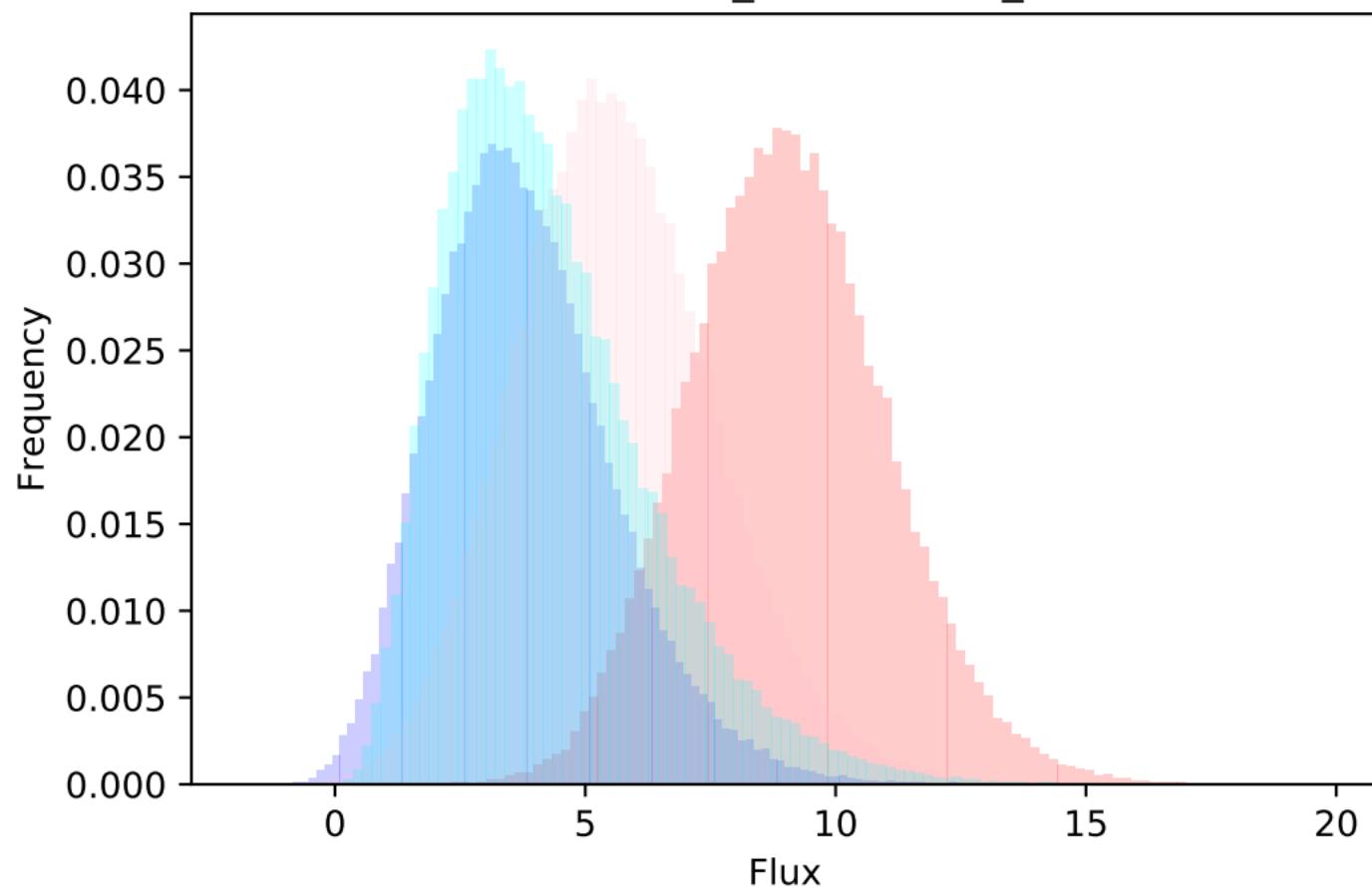
381 : H2O\_c <=> H2O\_p



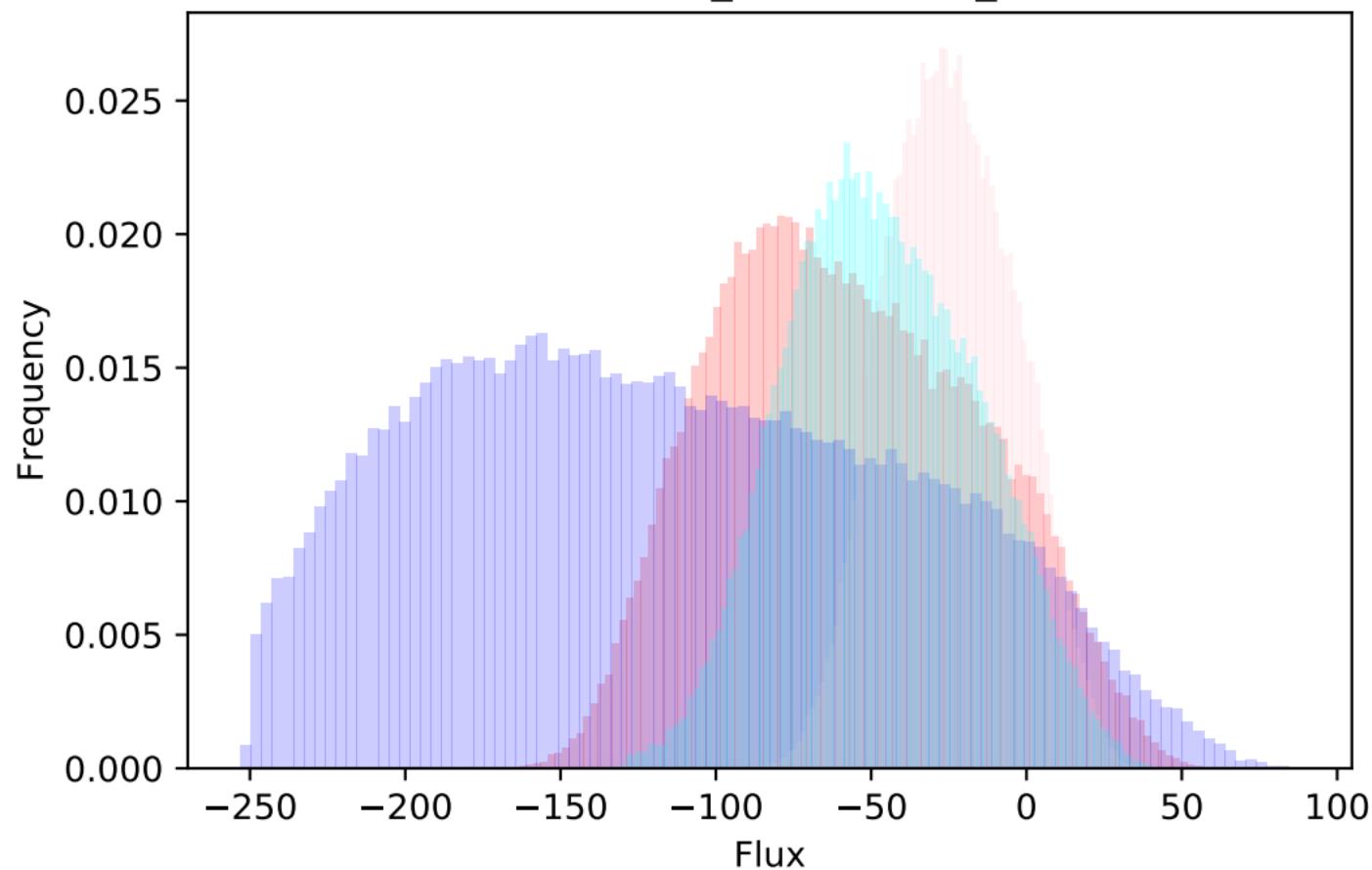
382 : H\_c <=> H\_p



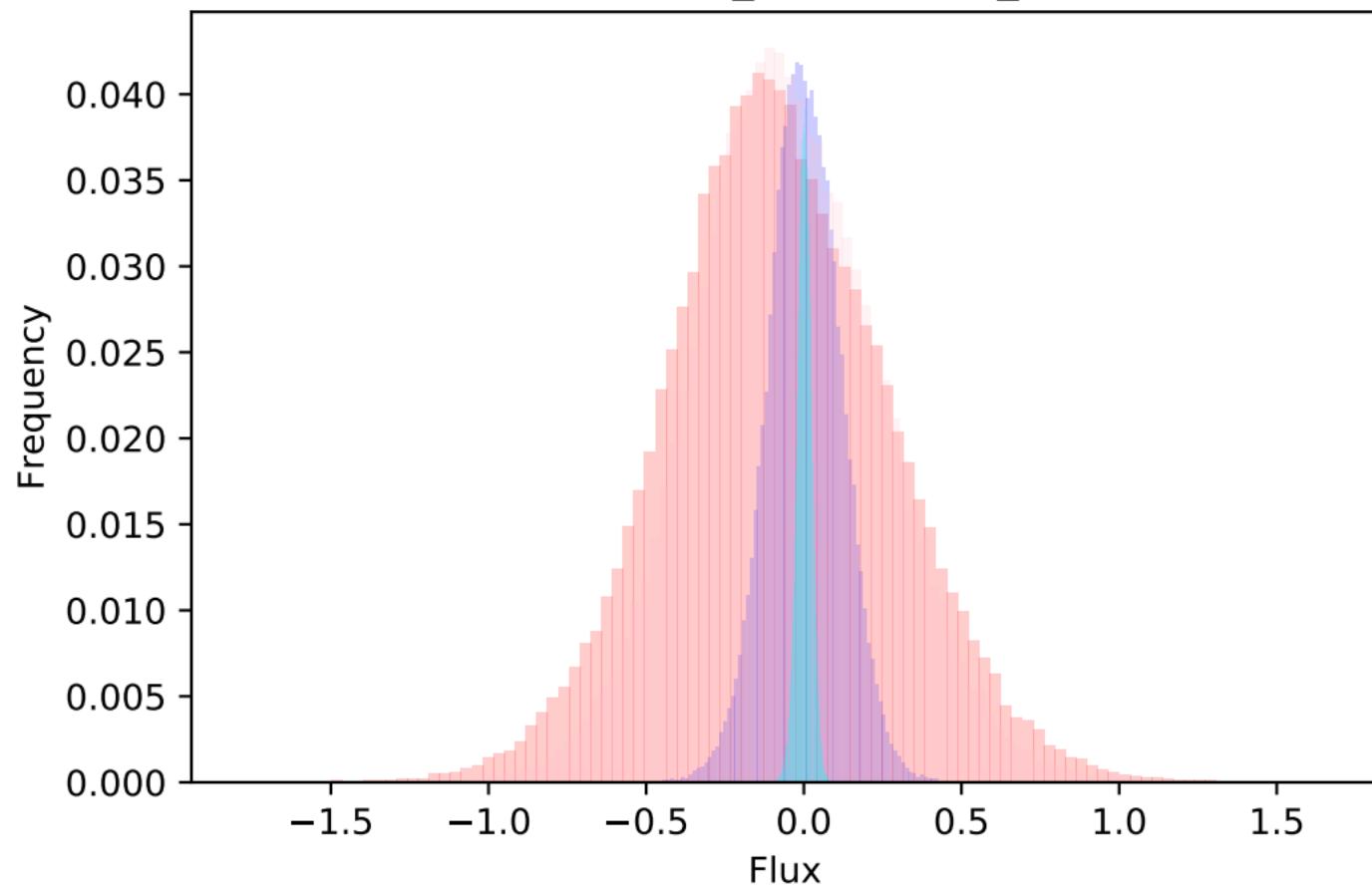
383 : NH4\_c <=> NH4\_h



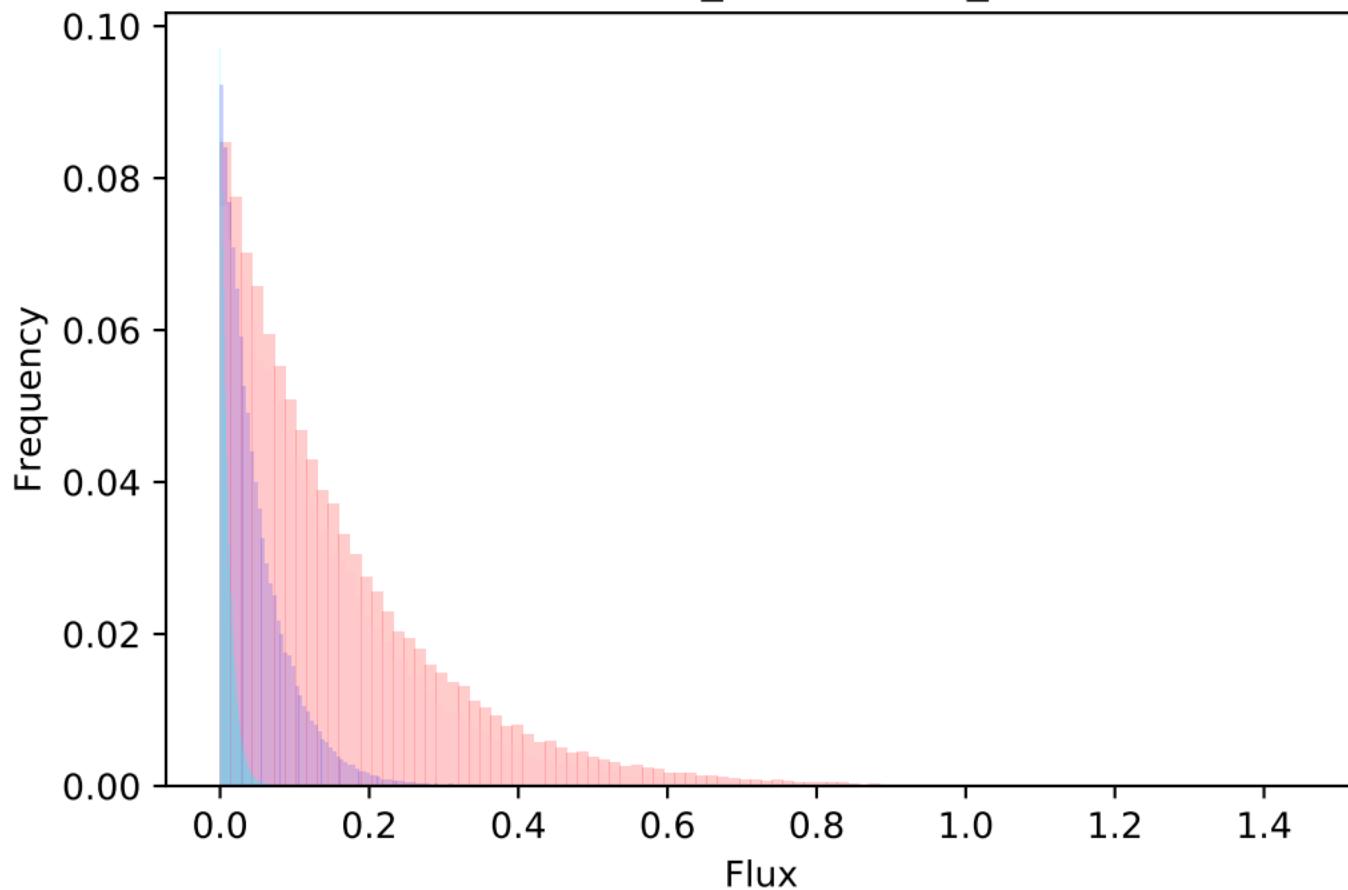
384 : NH4\_c <=> NH4\_m



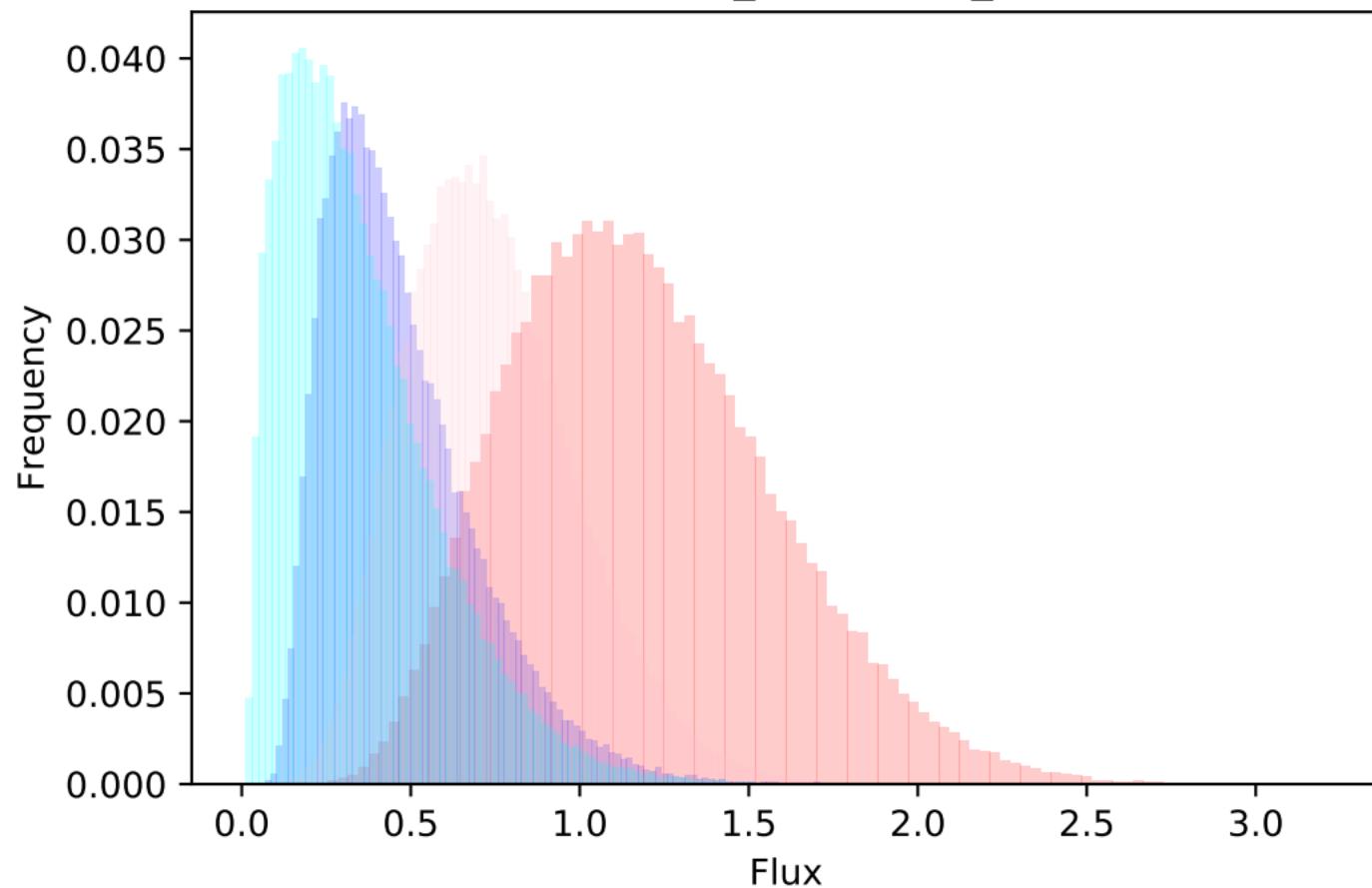
385 : H2S\_c <=> H2S\_h



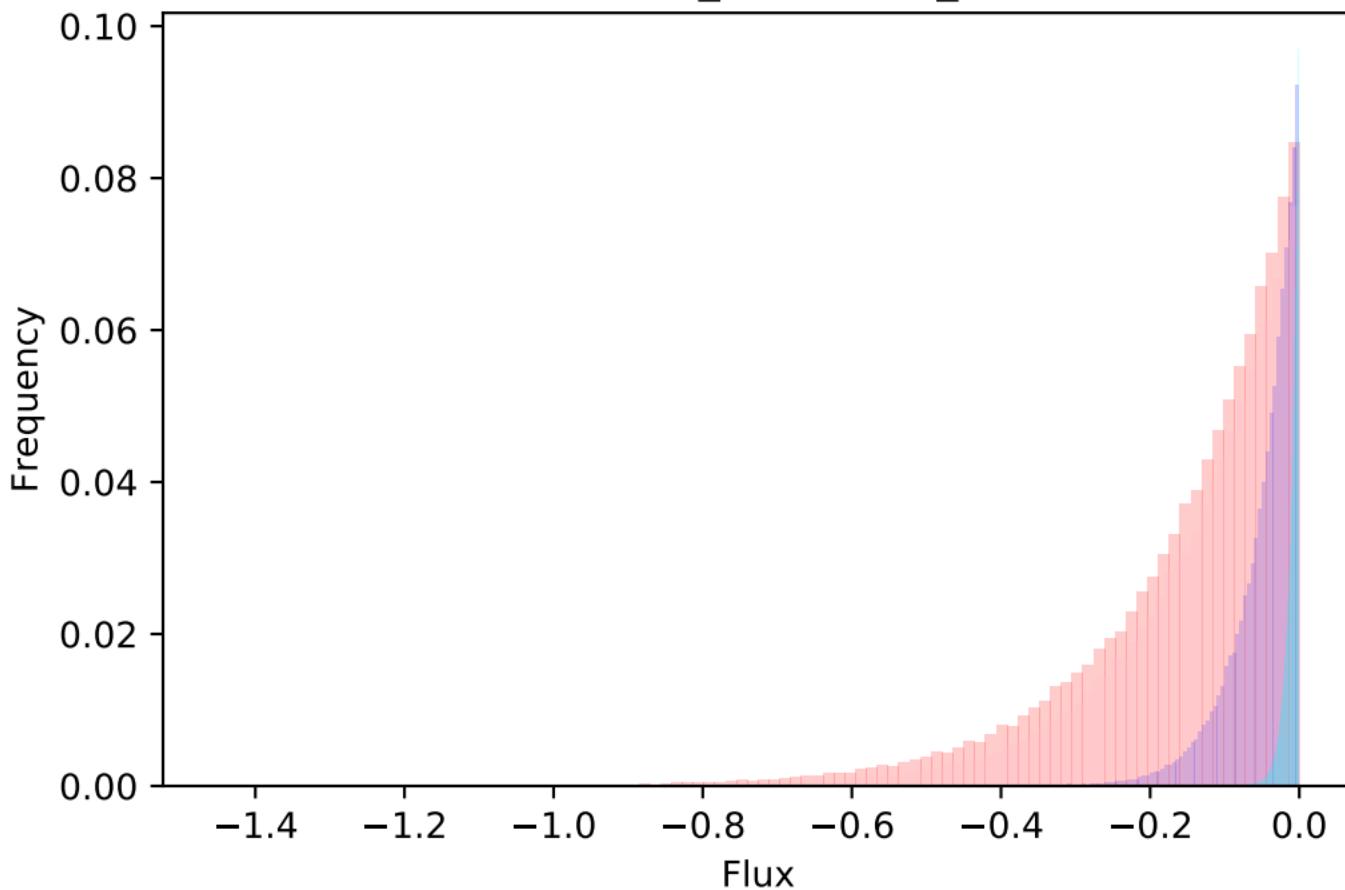
386 : H2S\_c <=> H2S\_m



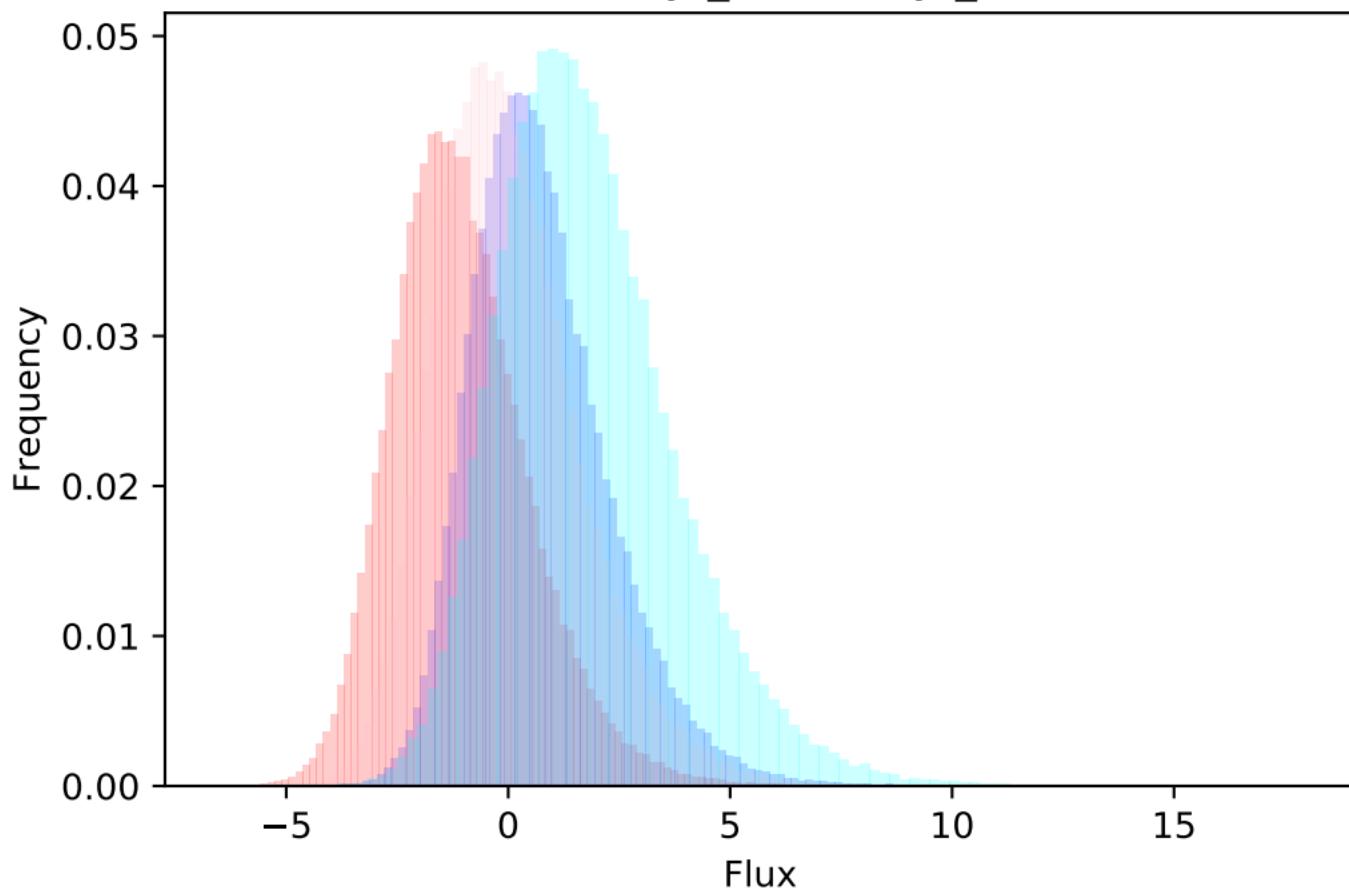
387 : AC\_c <=> AC\_h



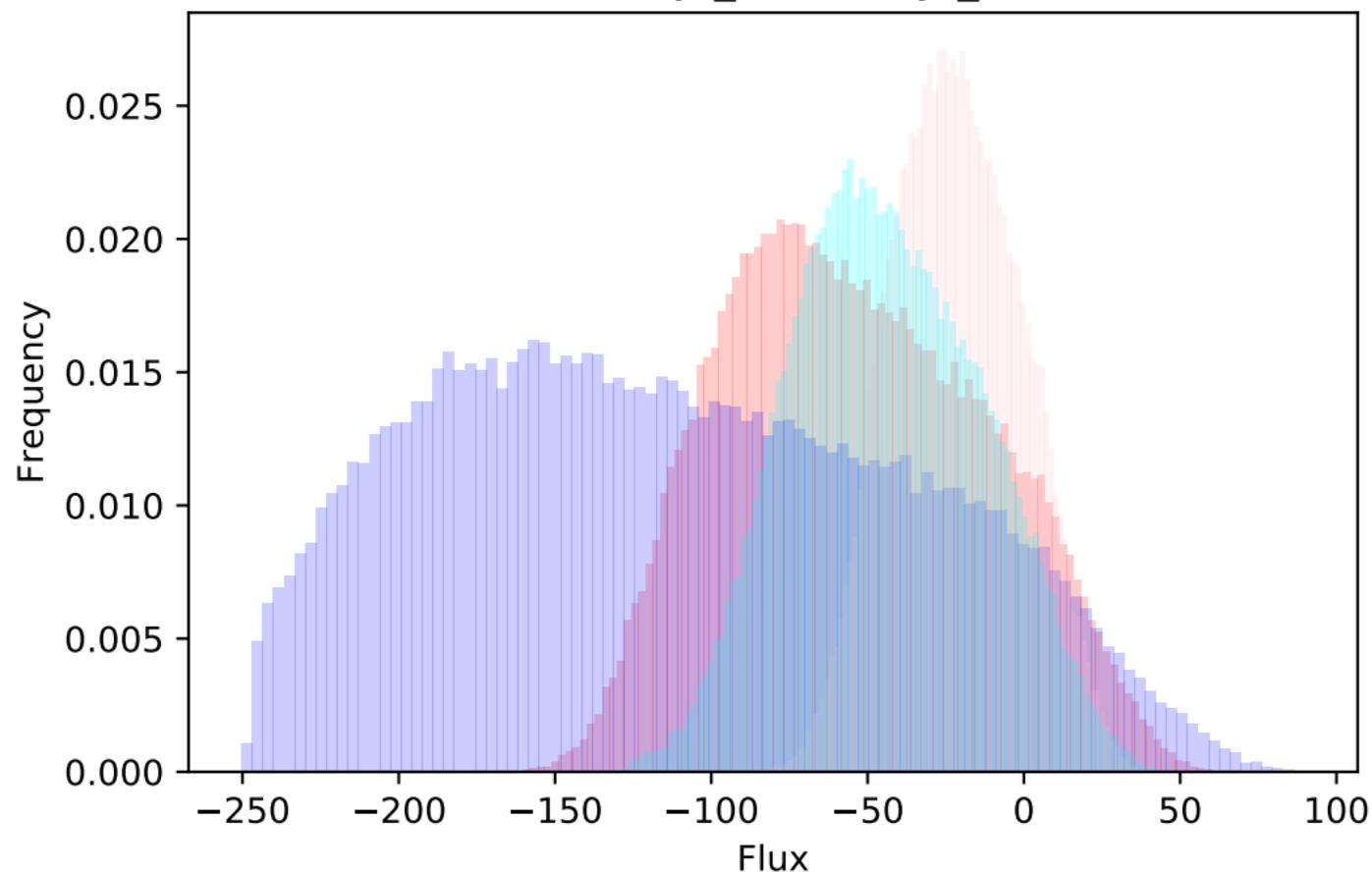
388 : AC\_c <=> AC\_m



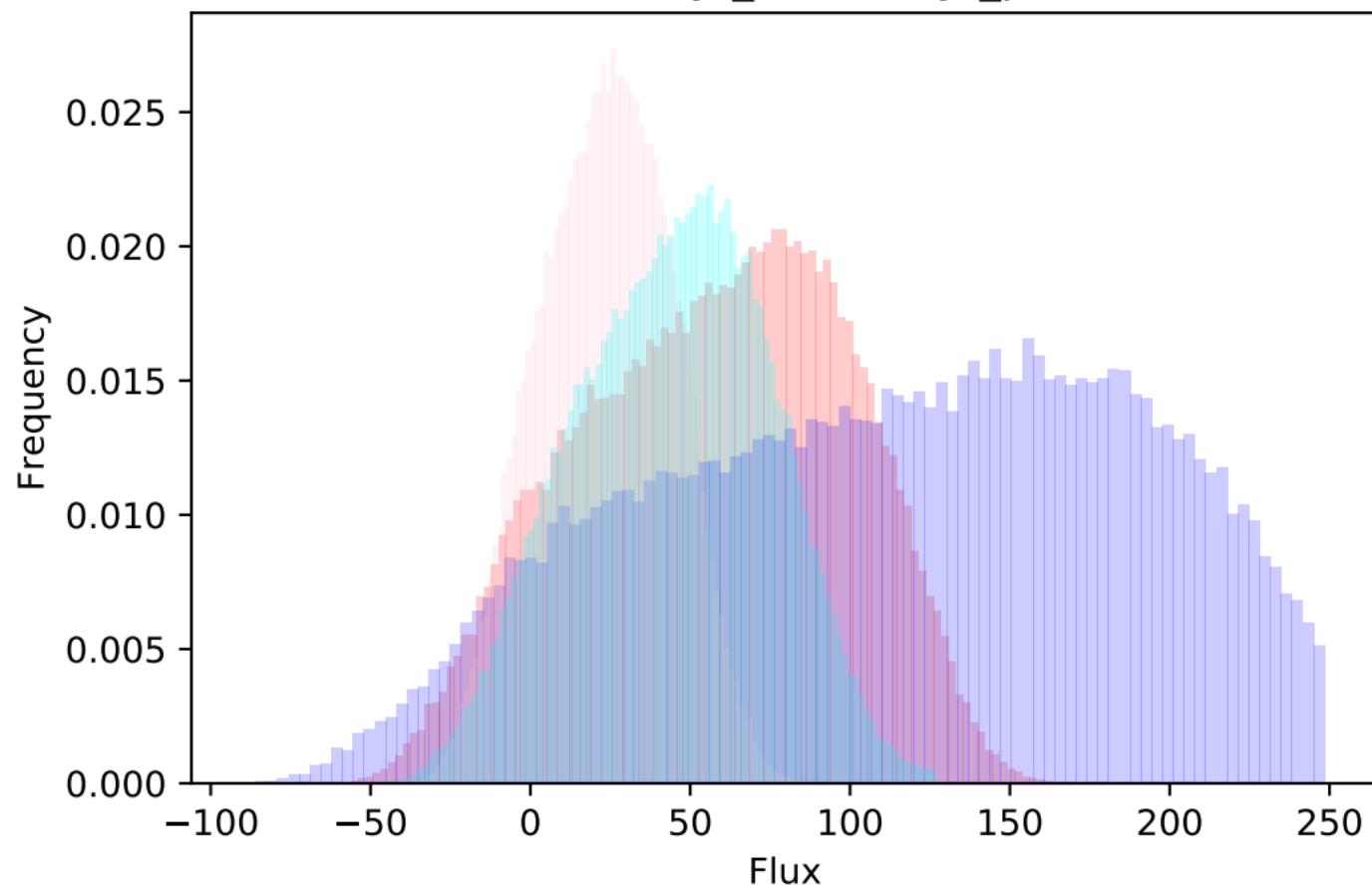
389 : Pyr\_c <=> Pyr\_h



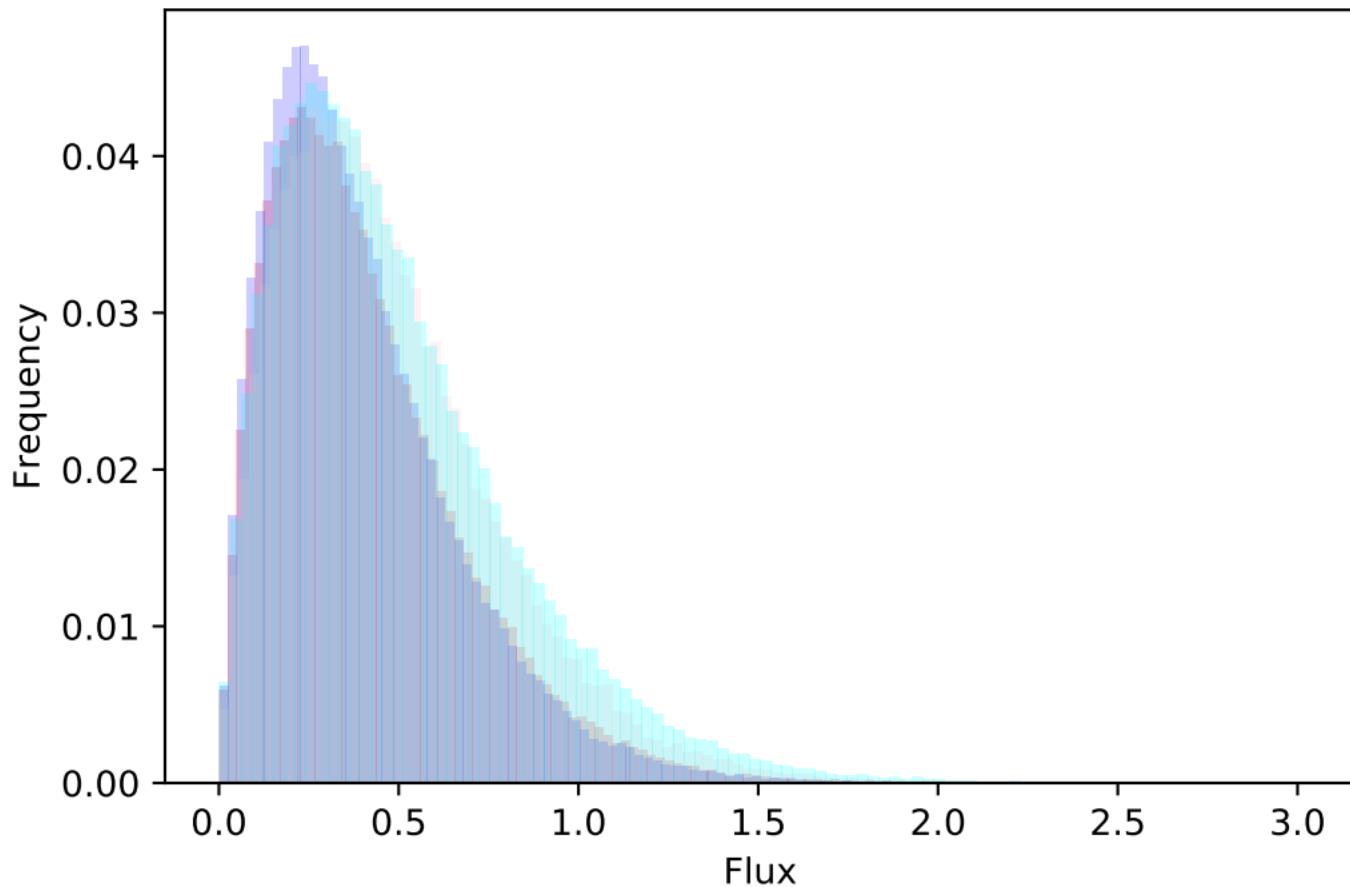
390 : Pyr\_c <=> Pyr\_m



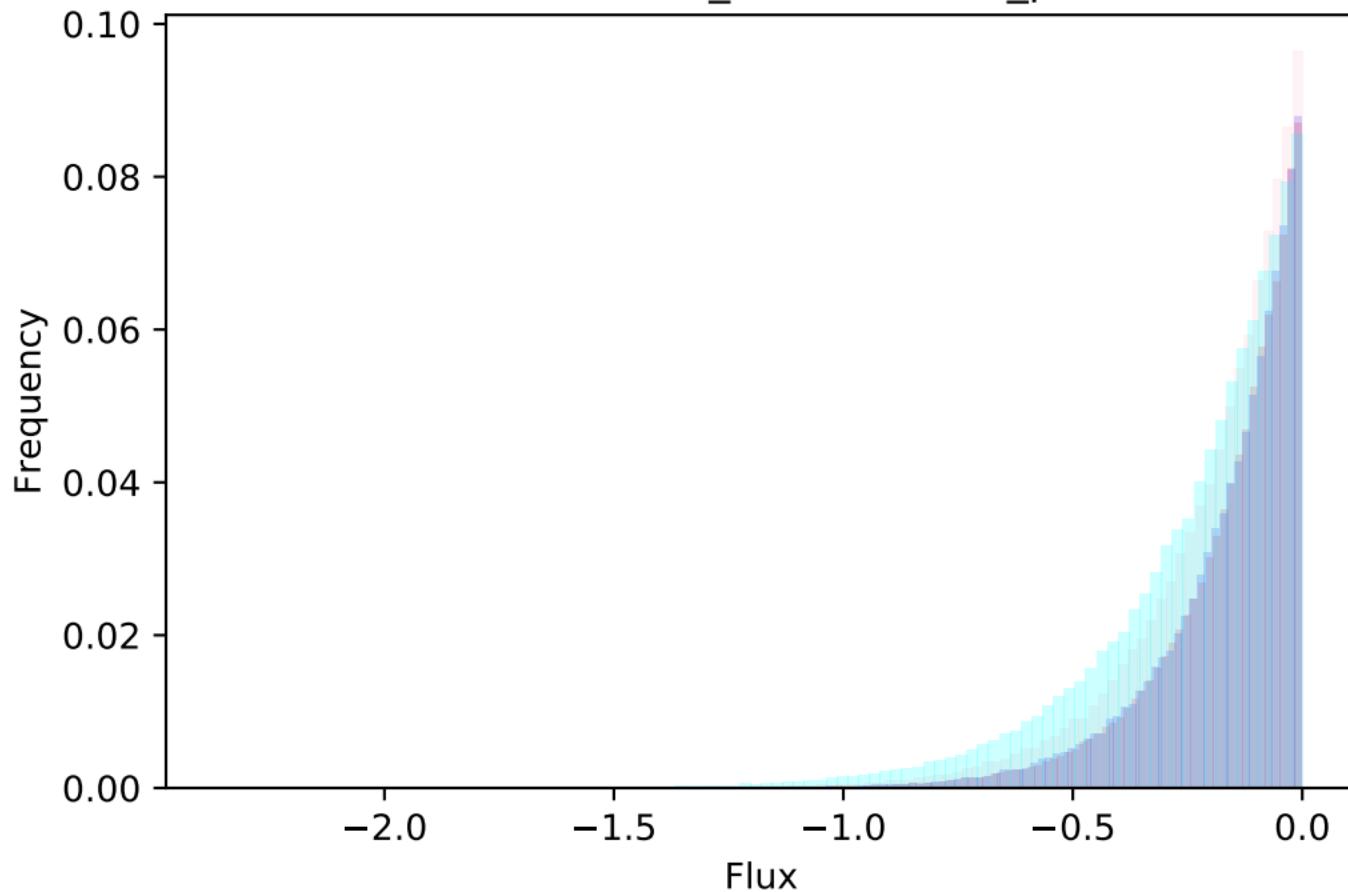
391 : Pyr\_c <=> Pyr\_p



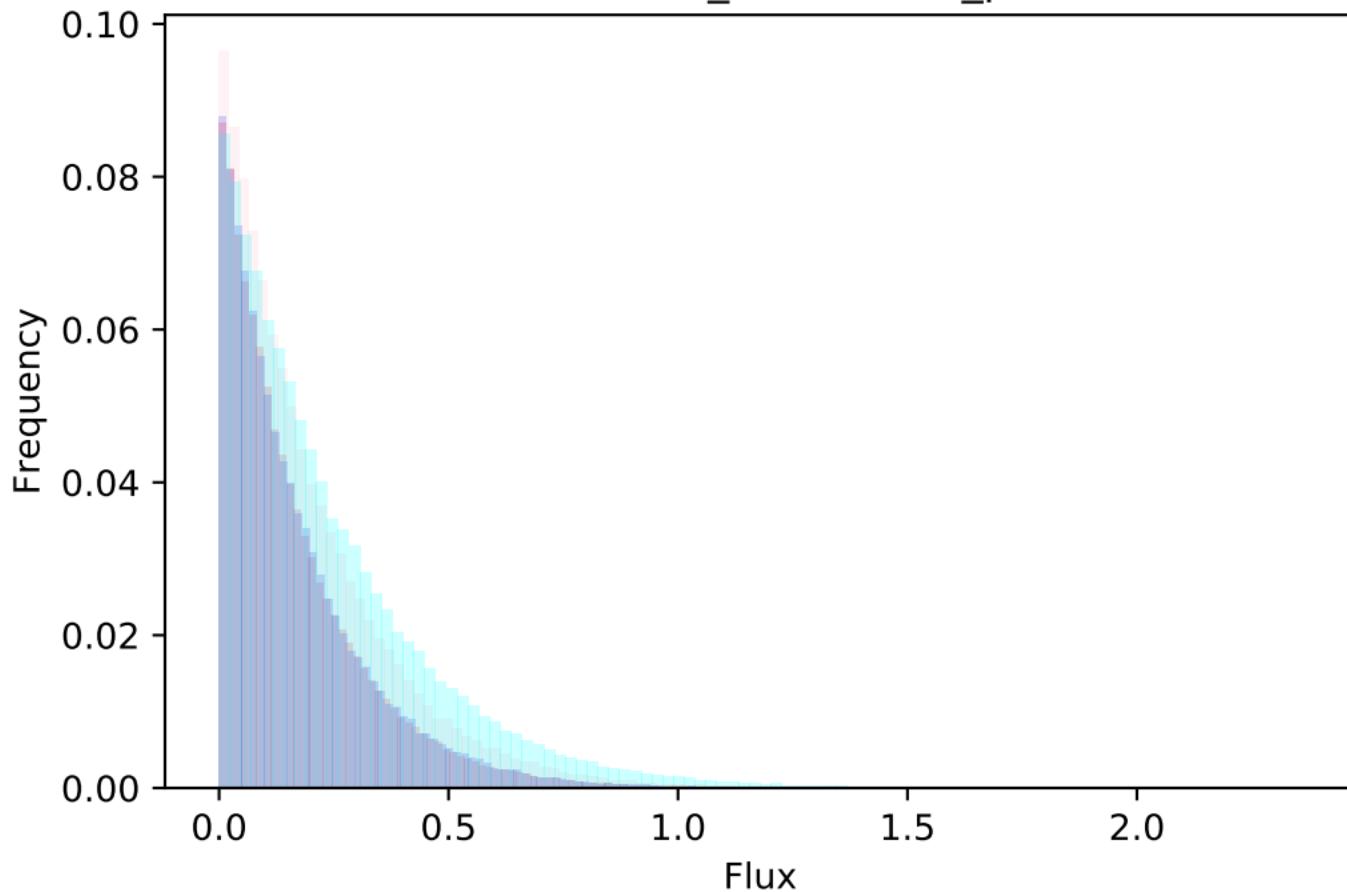
392 : GCA\_c <=> GCA\_p



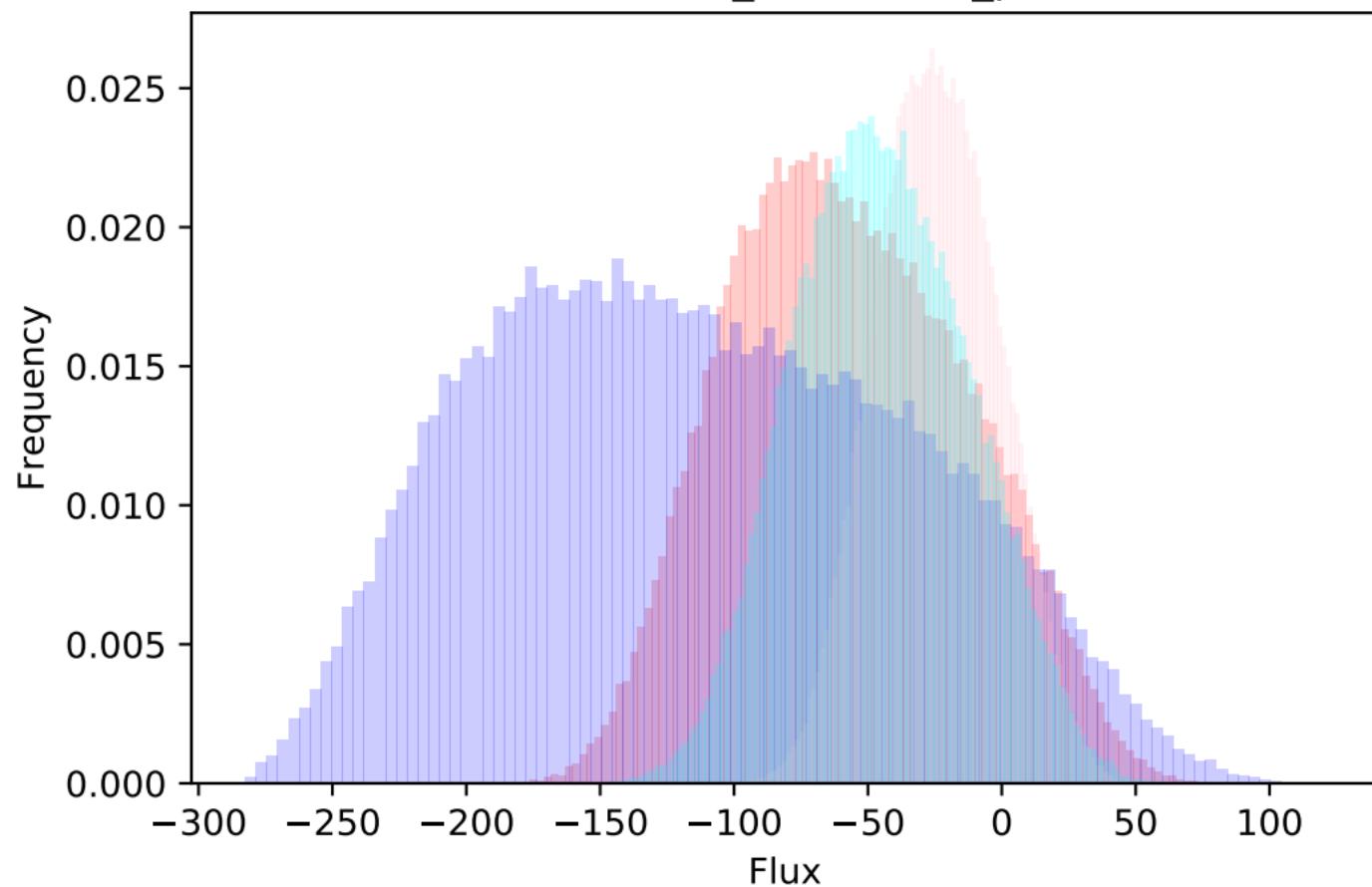
393 : GCEA\_c <=> GCEA\_p



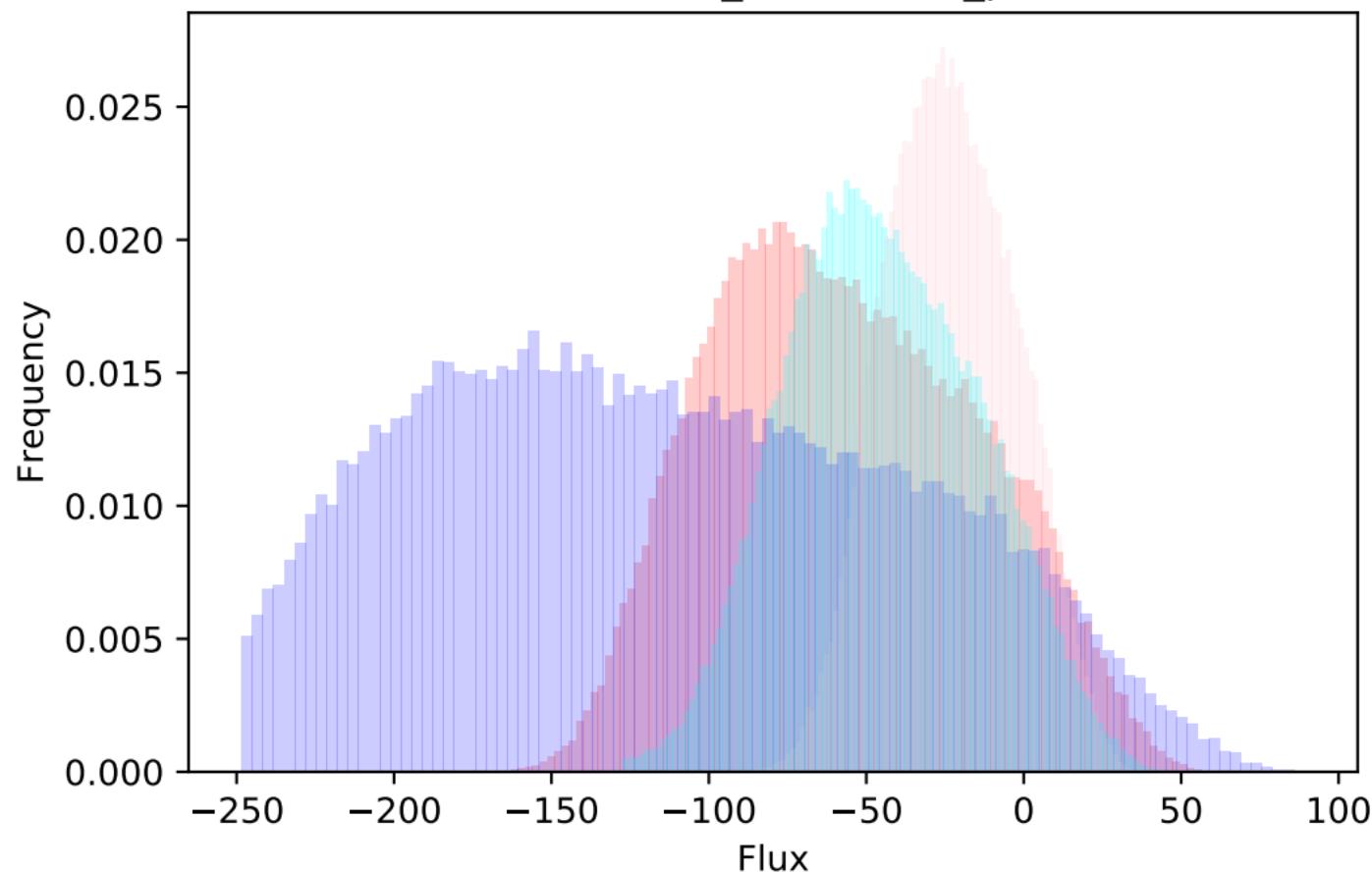
394 : Mal\_c <=> Mal\_p



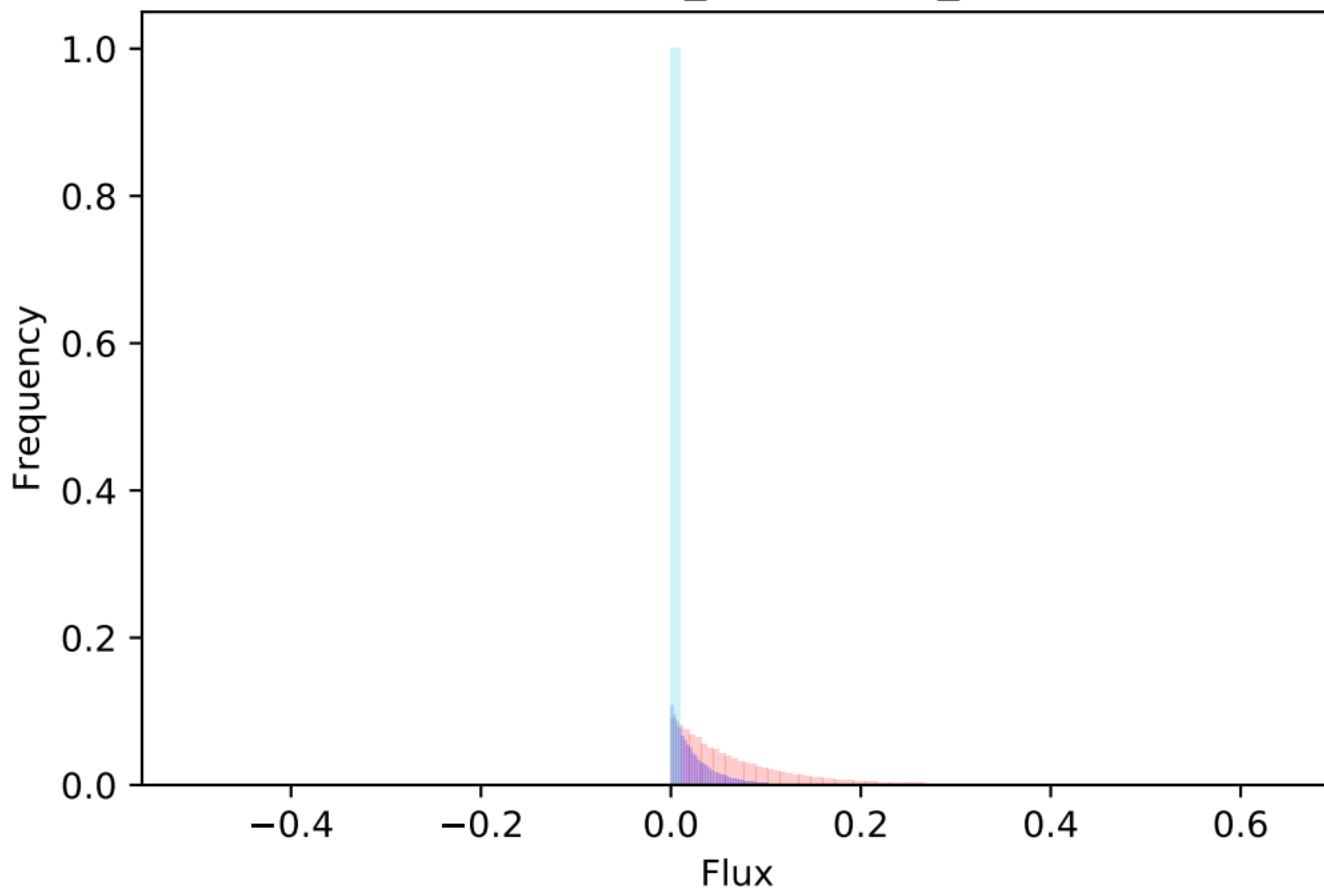
396 : KG\_c <=> KG\_p



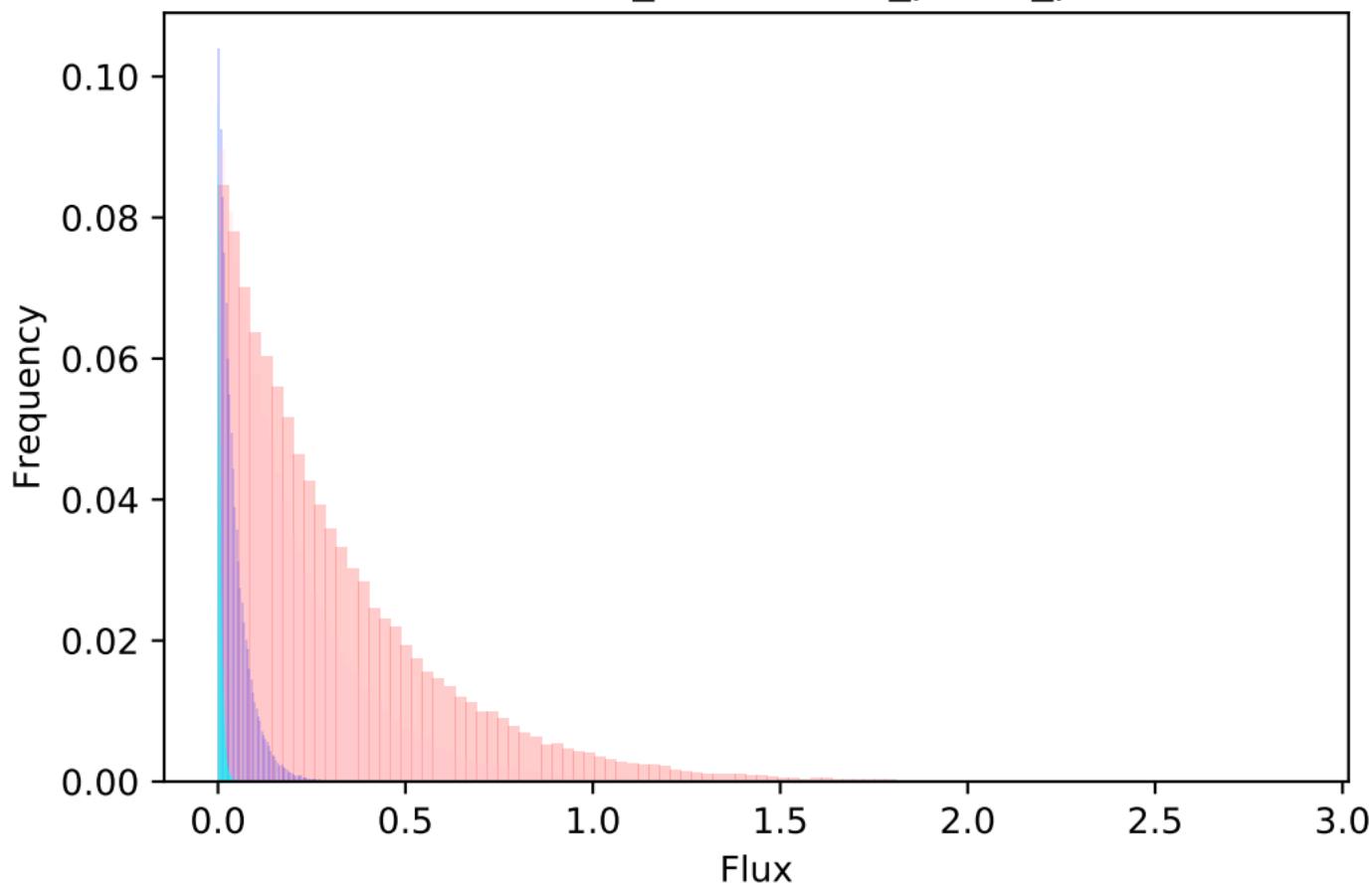
397 : Ala\_c <=> Ala\_p



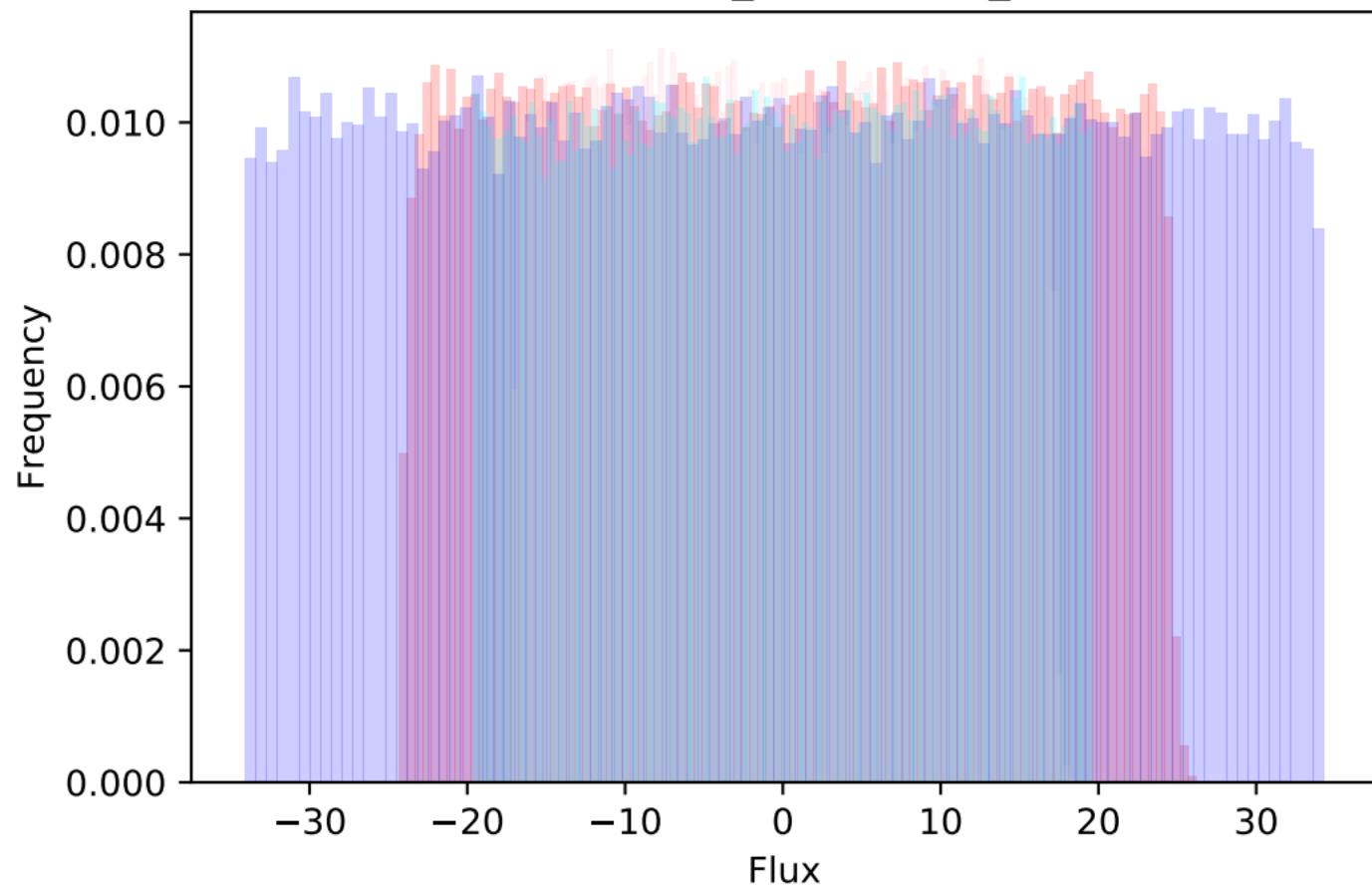
398 : Arg\_c <=> Arg\_p



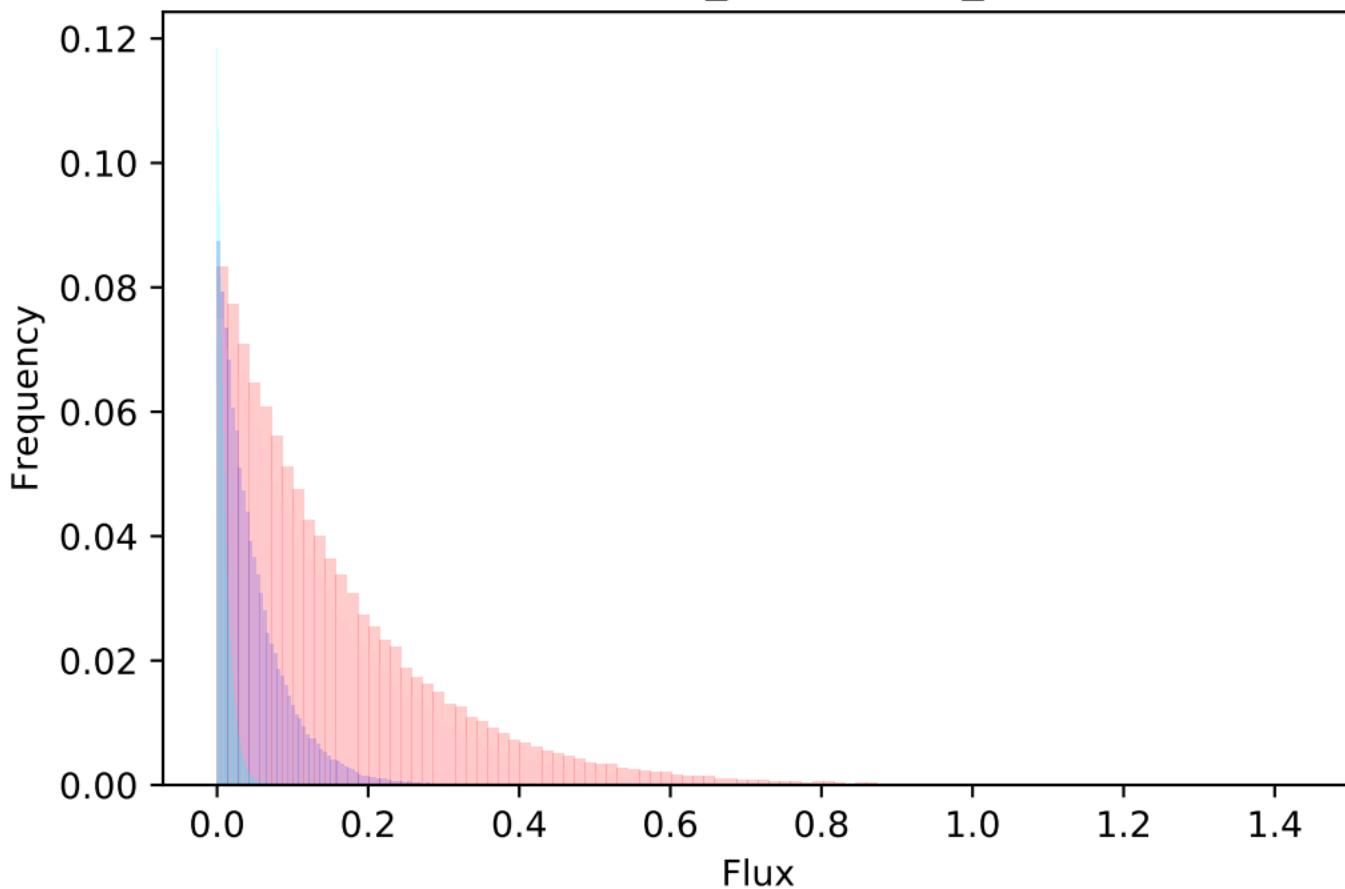
399 : Asn\_c <=> Asn\_p + H\_p



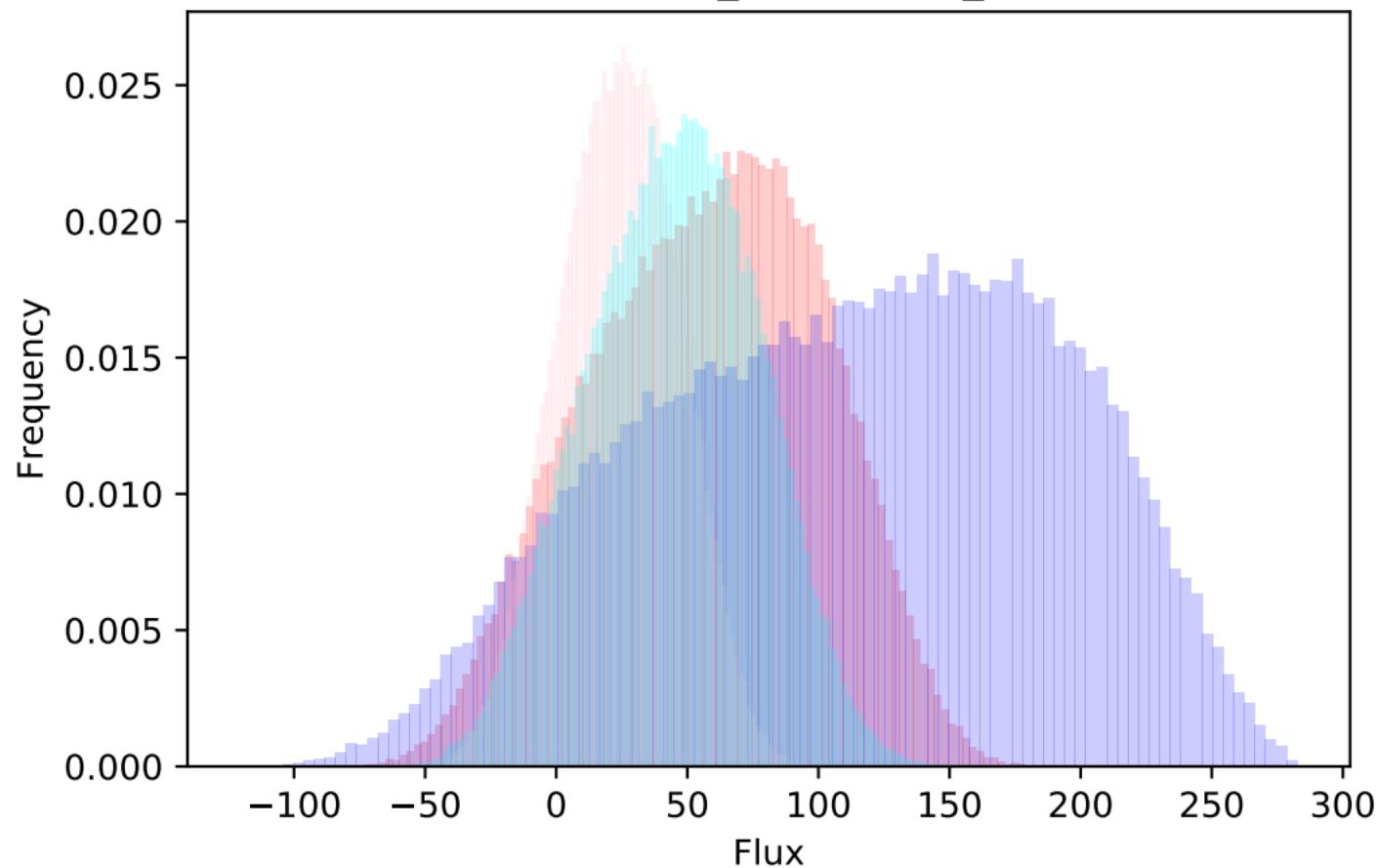
400 : Asp\_c <=> Asp\_p



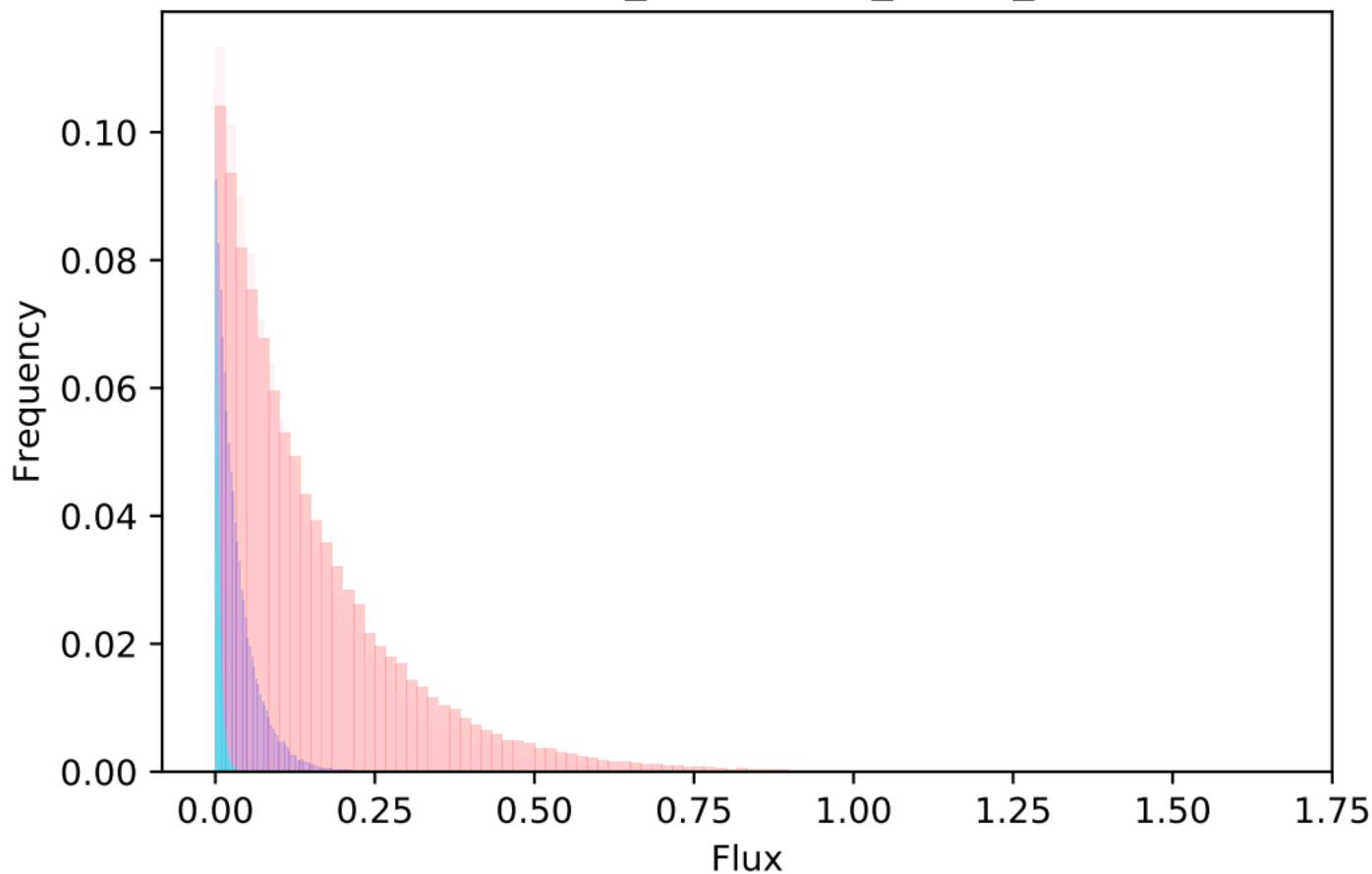
401 : Cys\_c <=> Cys\_p



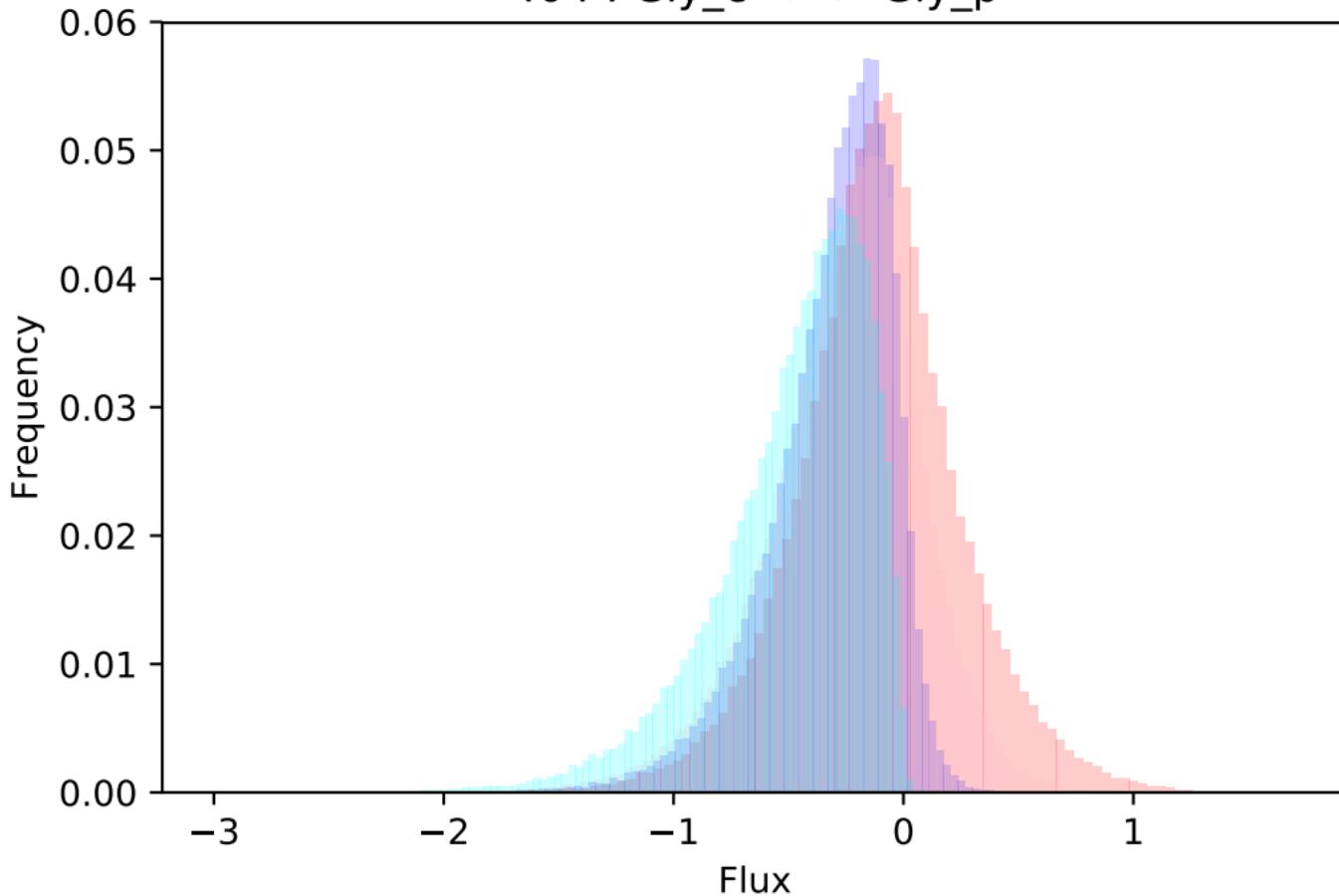
402 : Glu\_c <=> Glu\_p



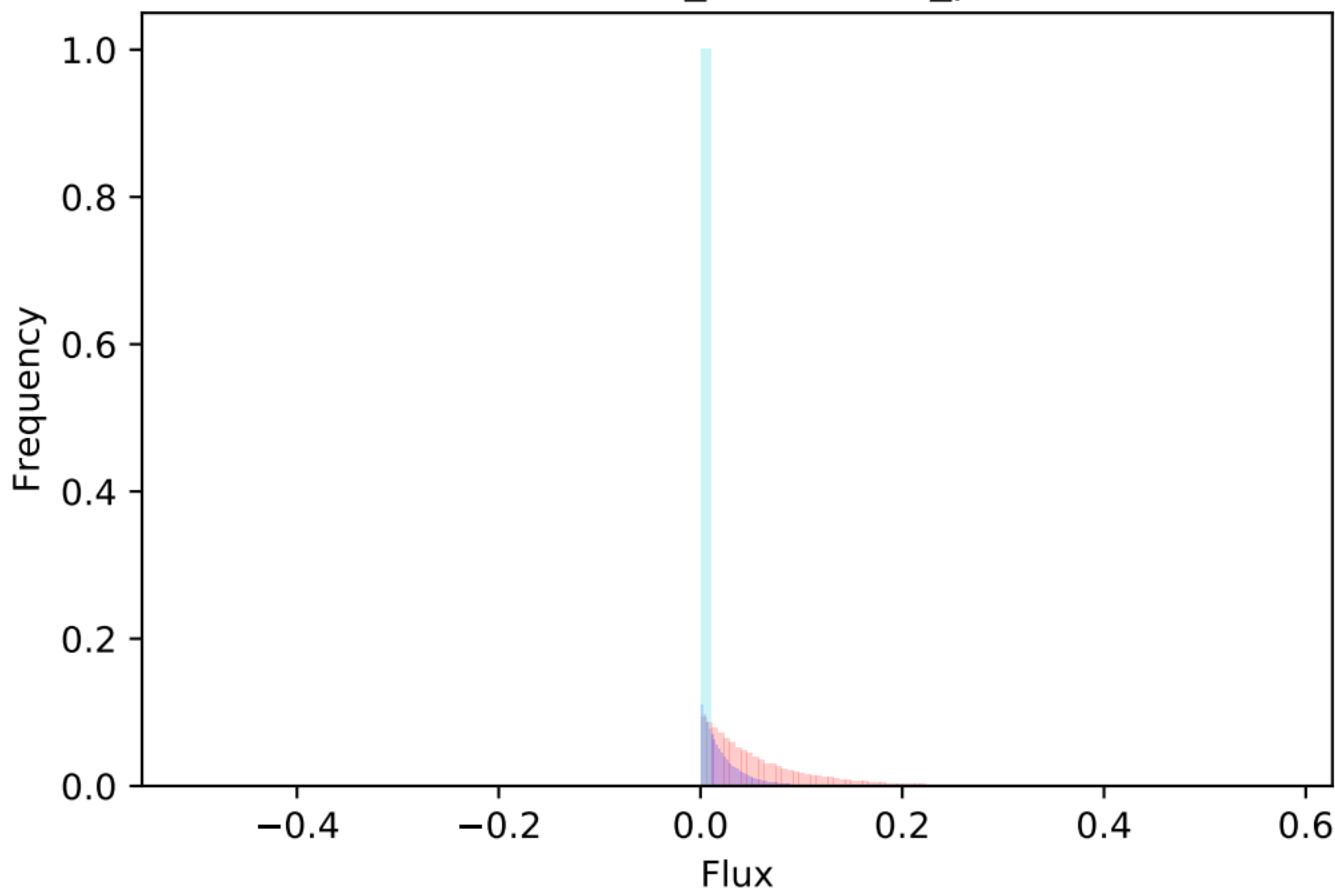
403 : Gln\_c <=> Gln\_p + H\_p



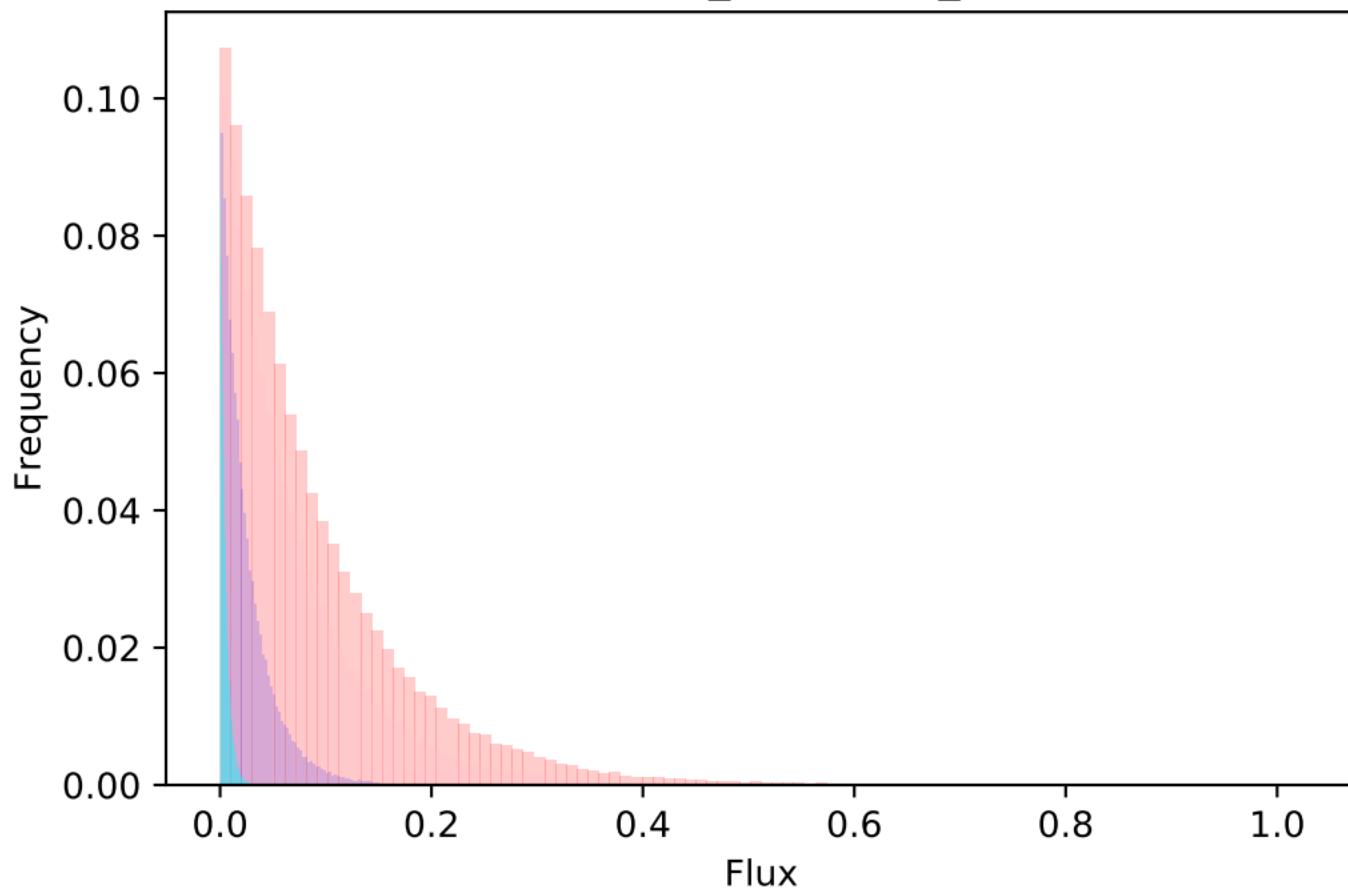
404 : Gly\_c <=> Gly\_p



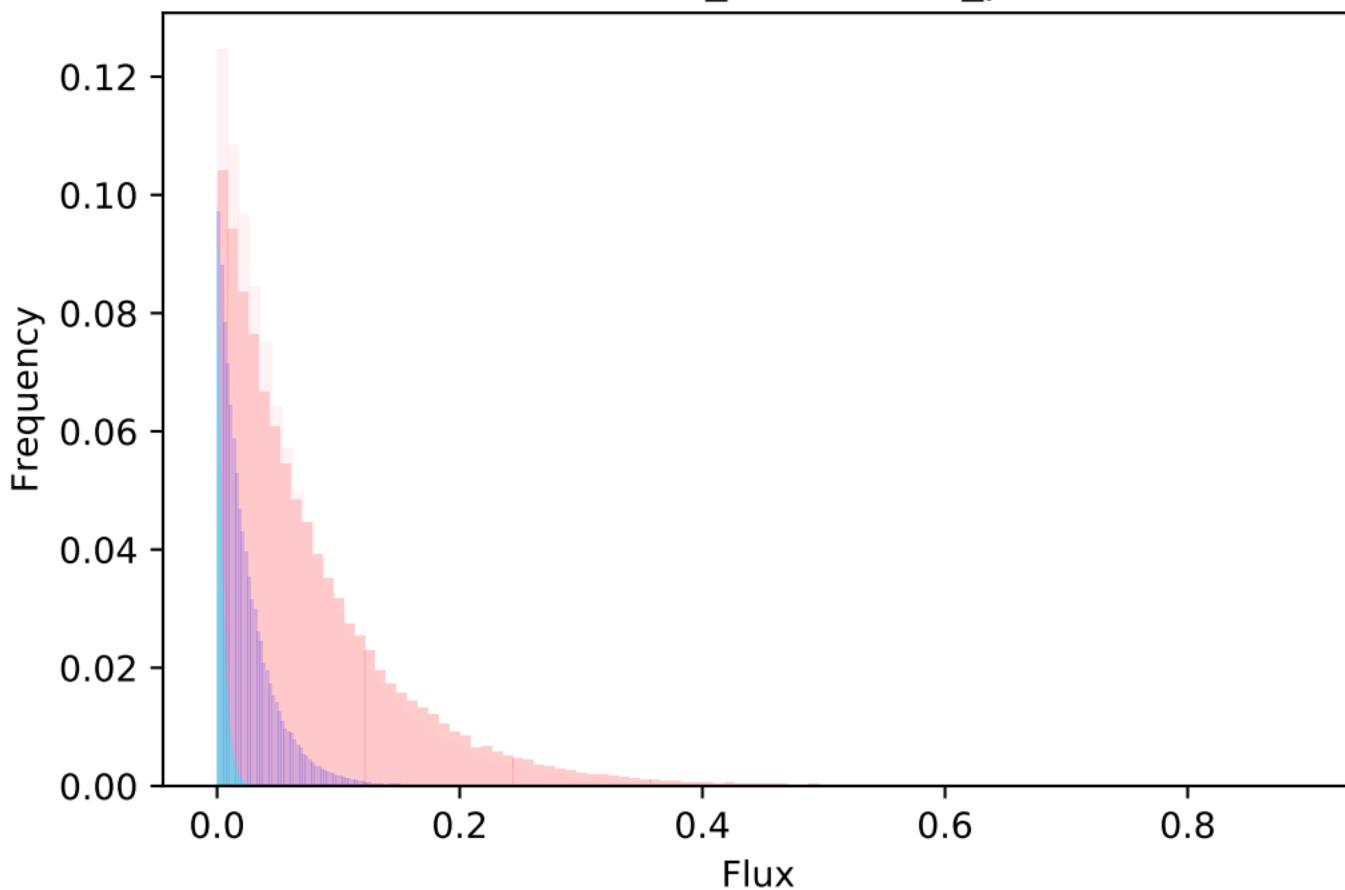
405 : His\_c <=> His\_p



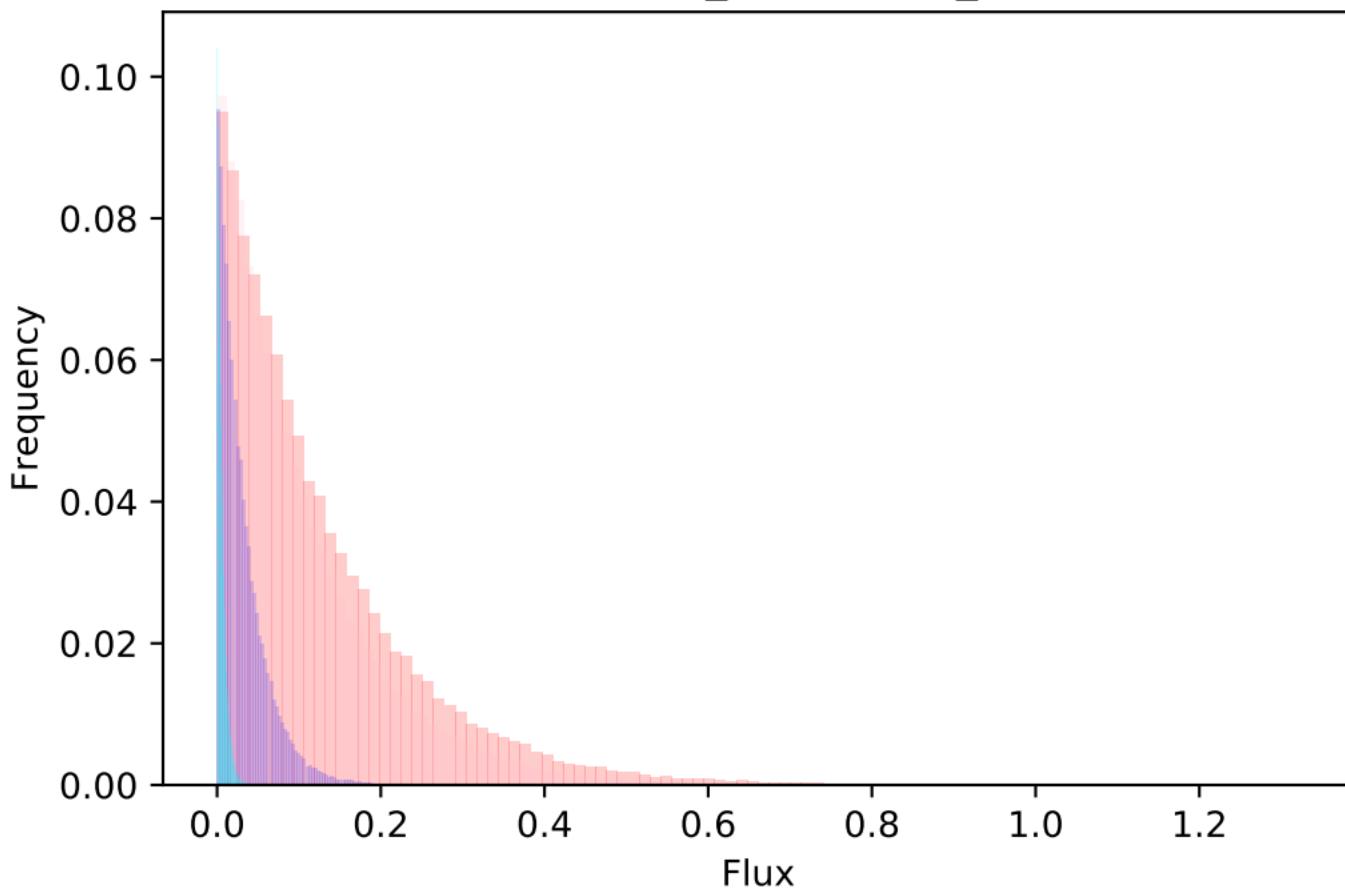
406 : lle\_c <=> lle\_p



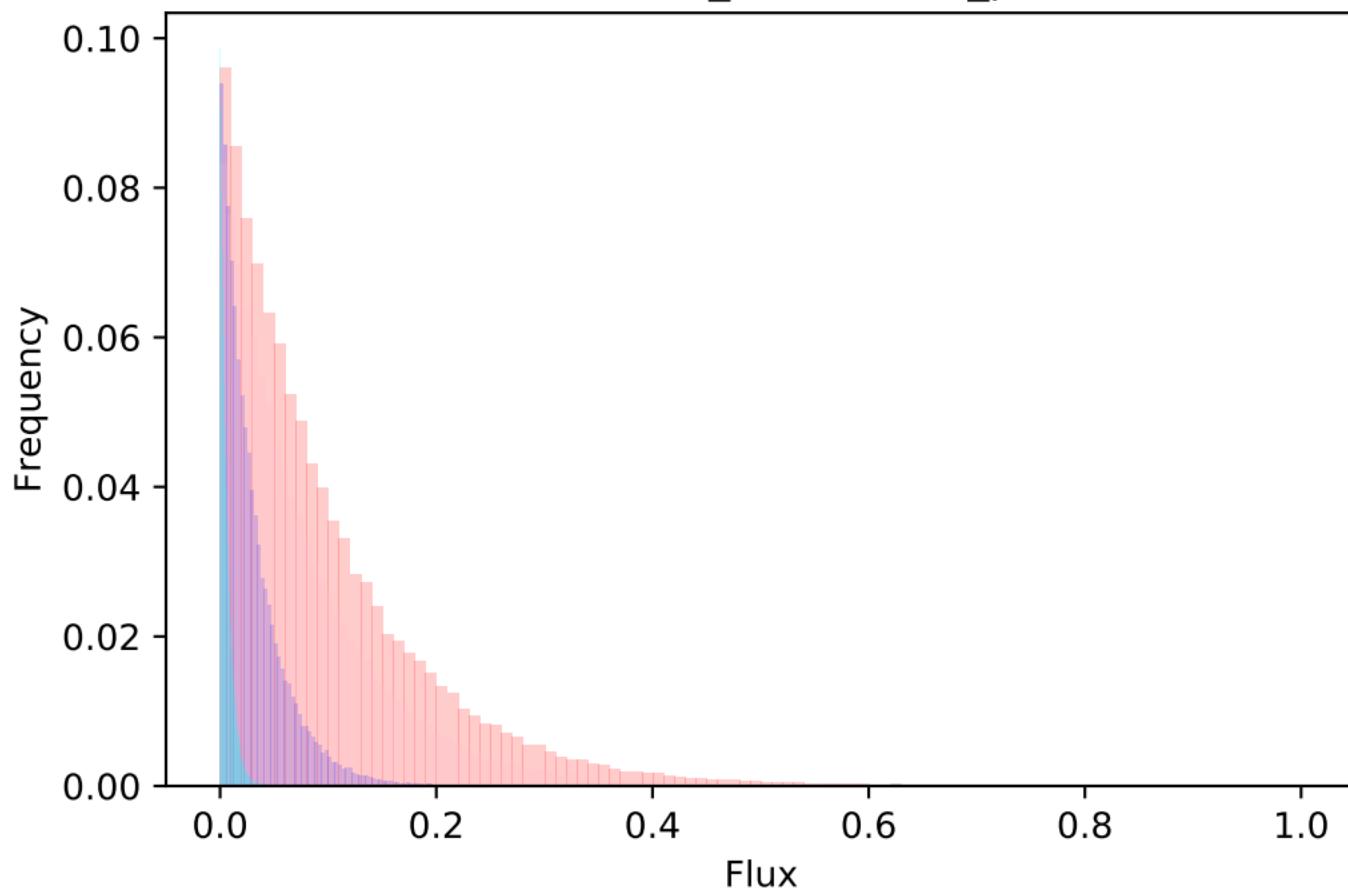
407 : Leu\_c <=> Leu\_p



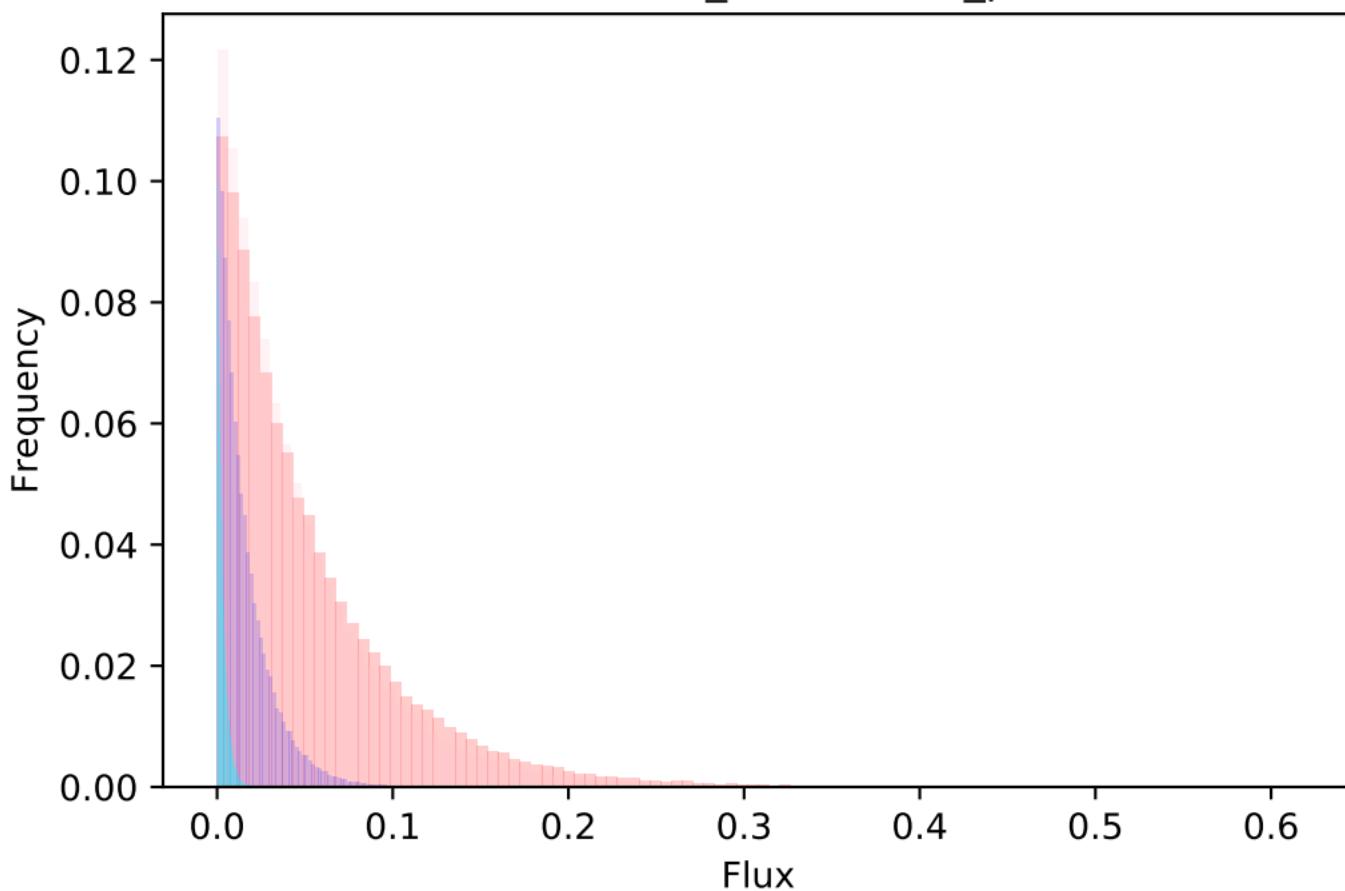
408 : Lys\_c <=> Lys\_p



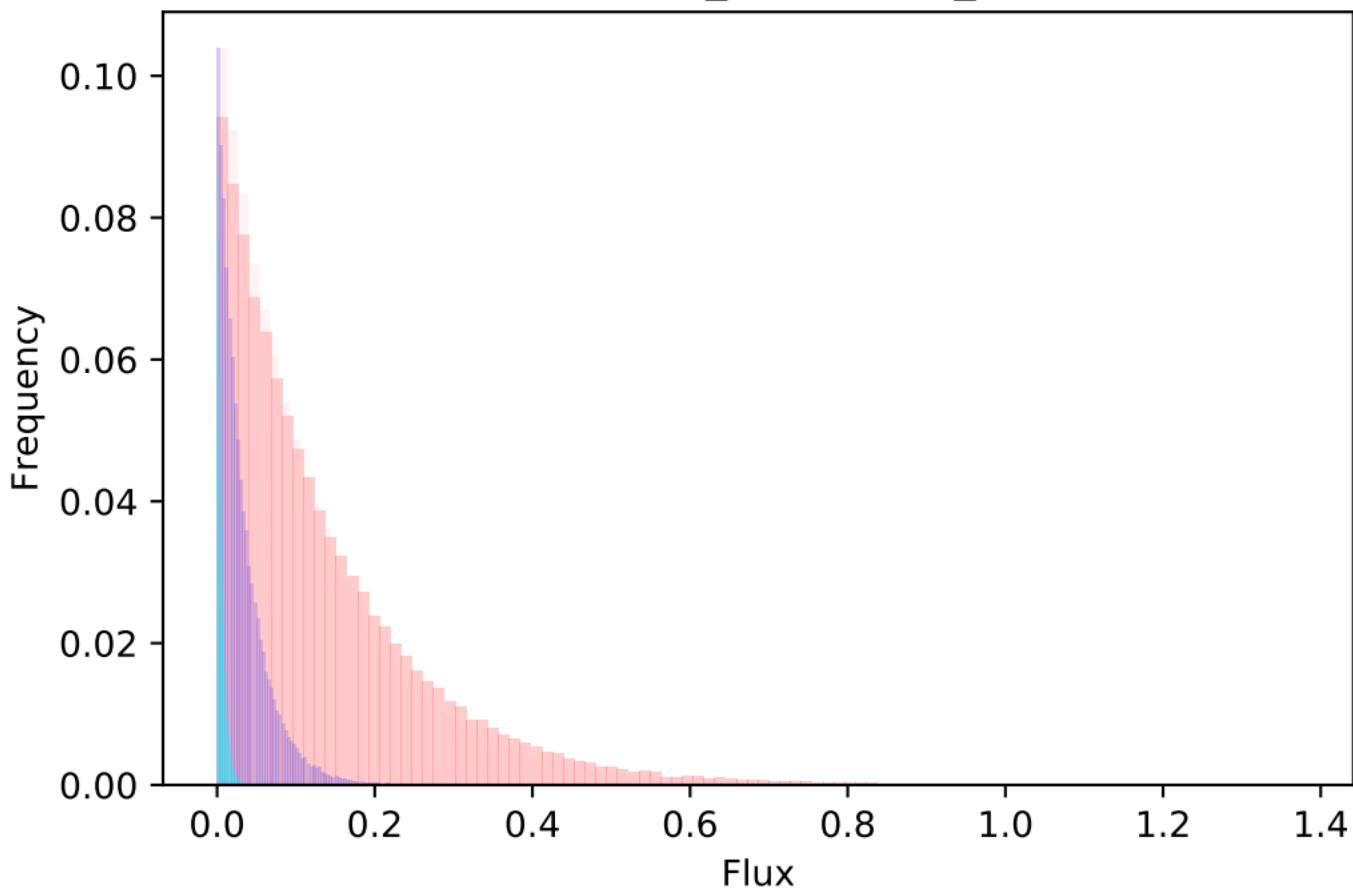
409 : Met\_c <=> Met\_p



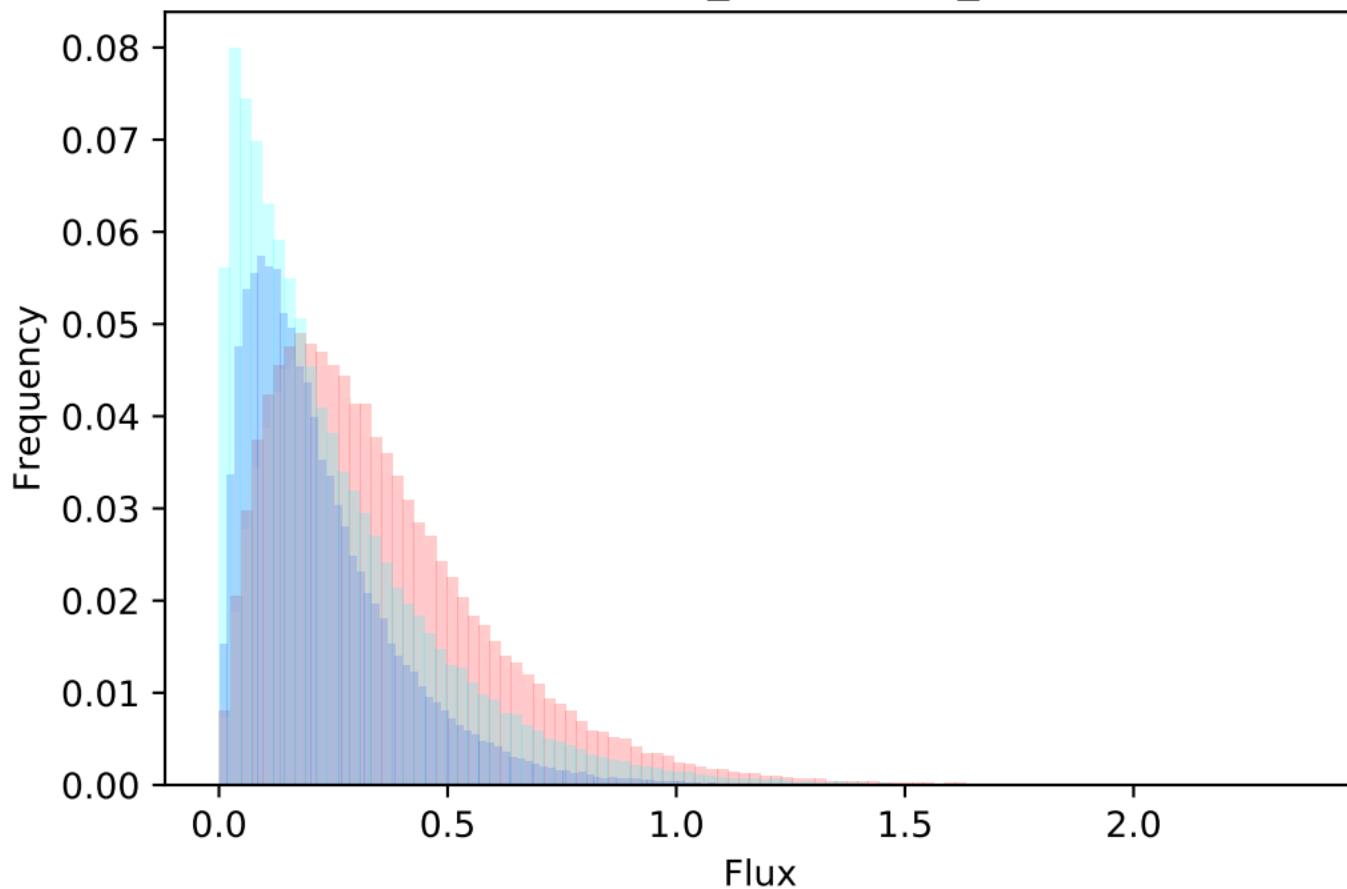
410 : Phe\_c <=> Phe\_p



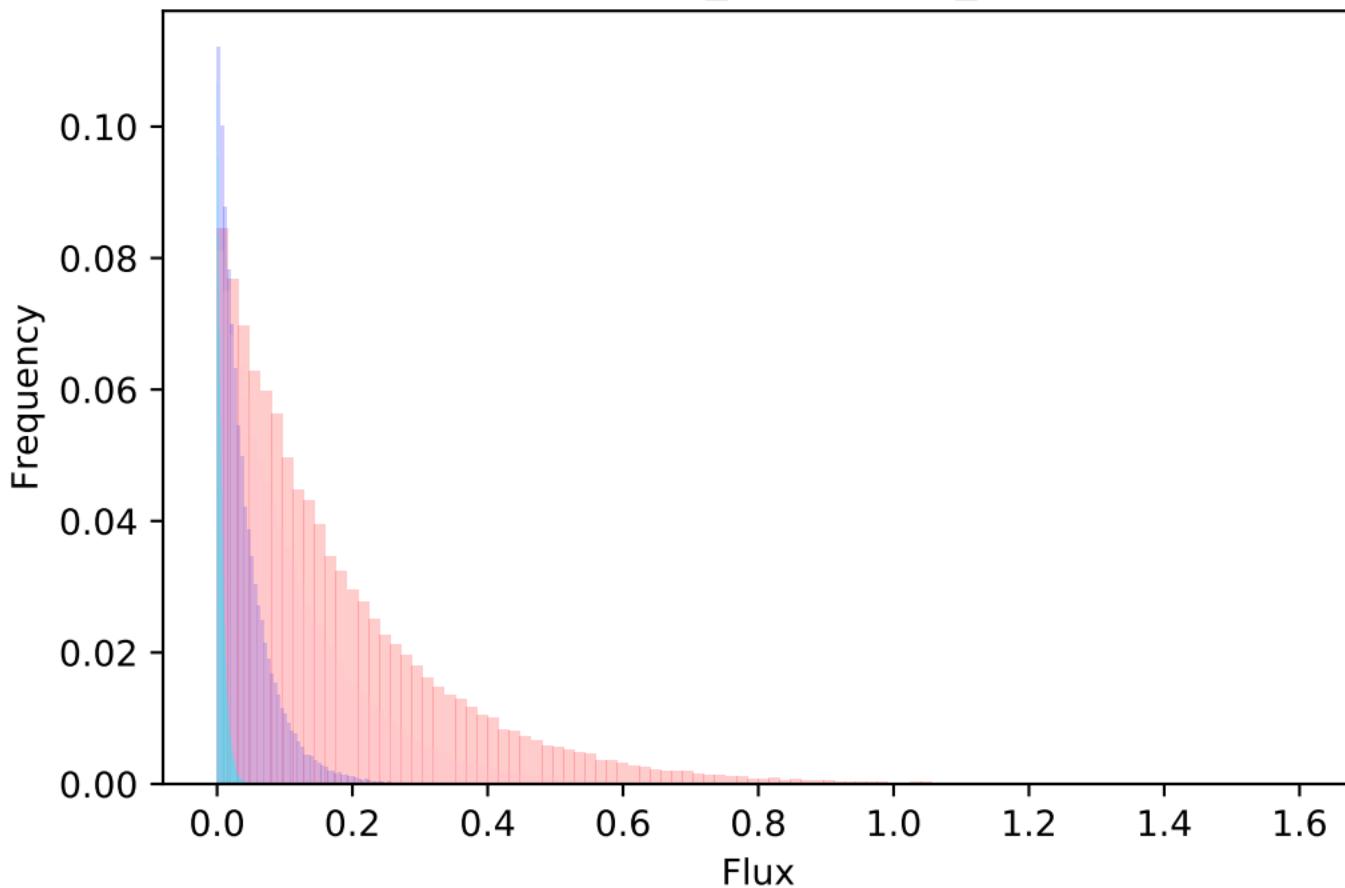
411 : Pro\_c <=> Pro\_p



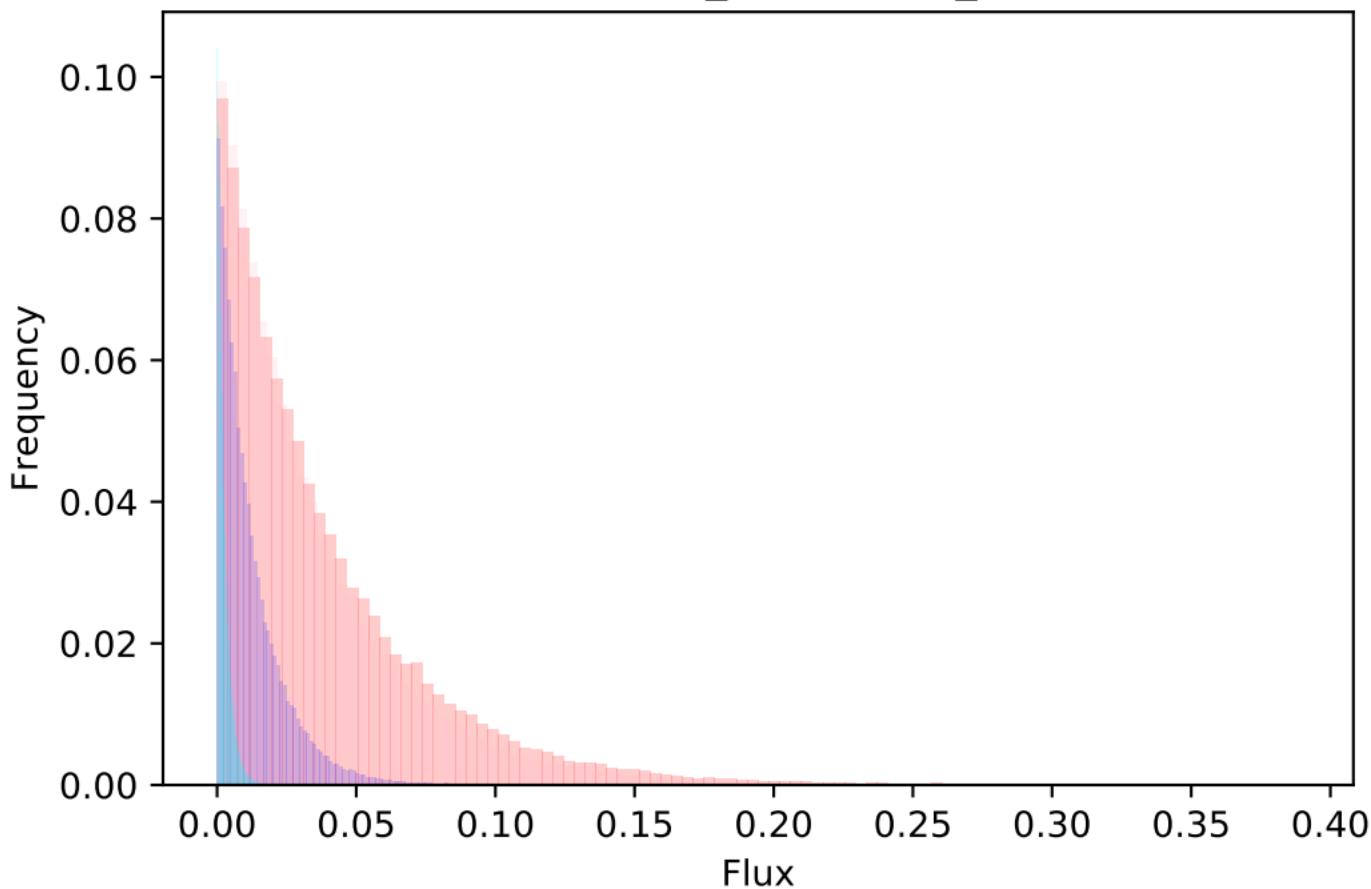
412 : Ser\_c <=> Ser\_p



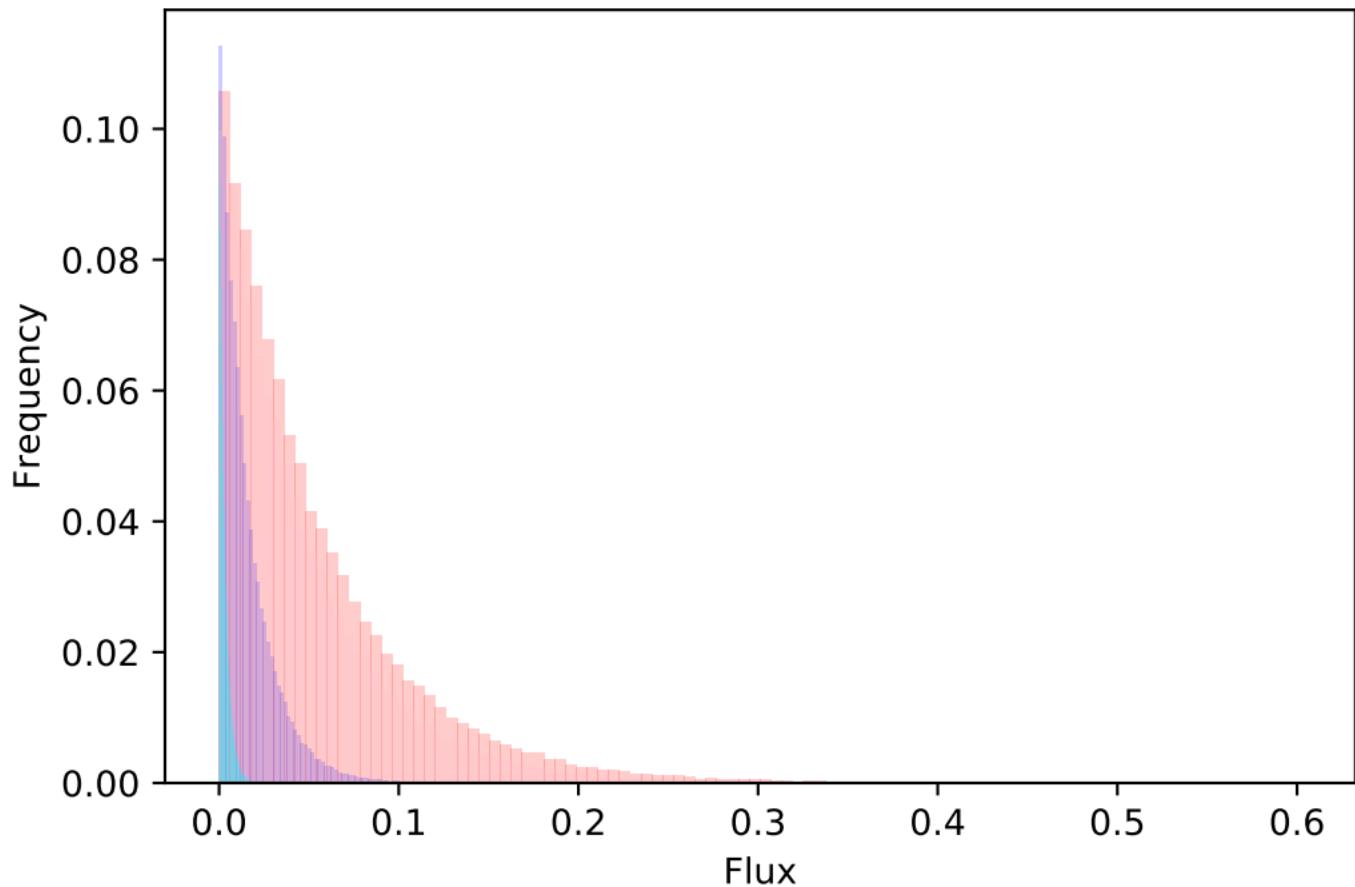
413 : Thr\_c <=> Thr\_p



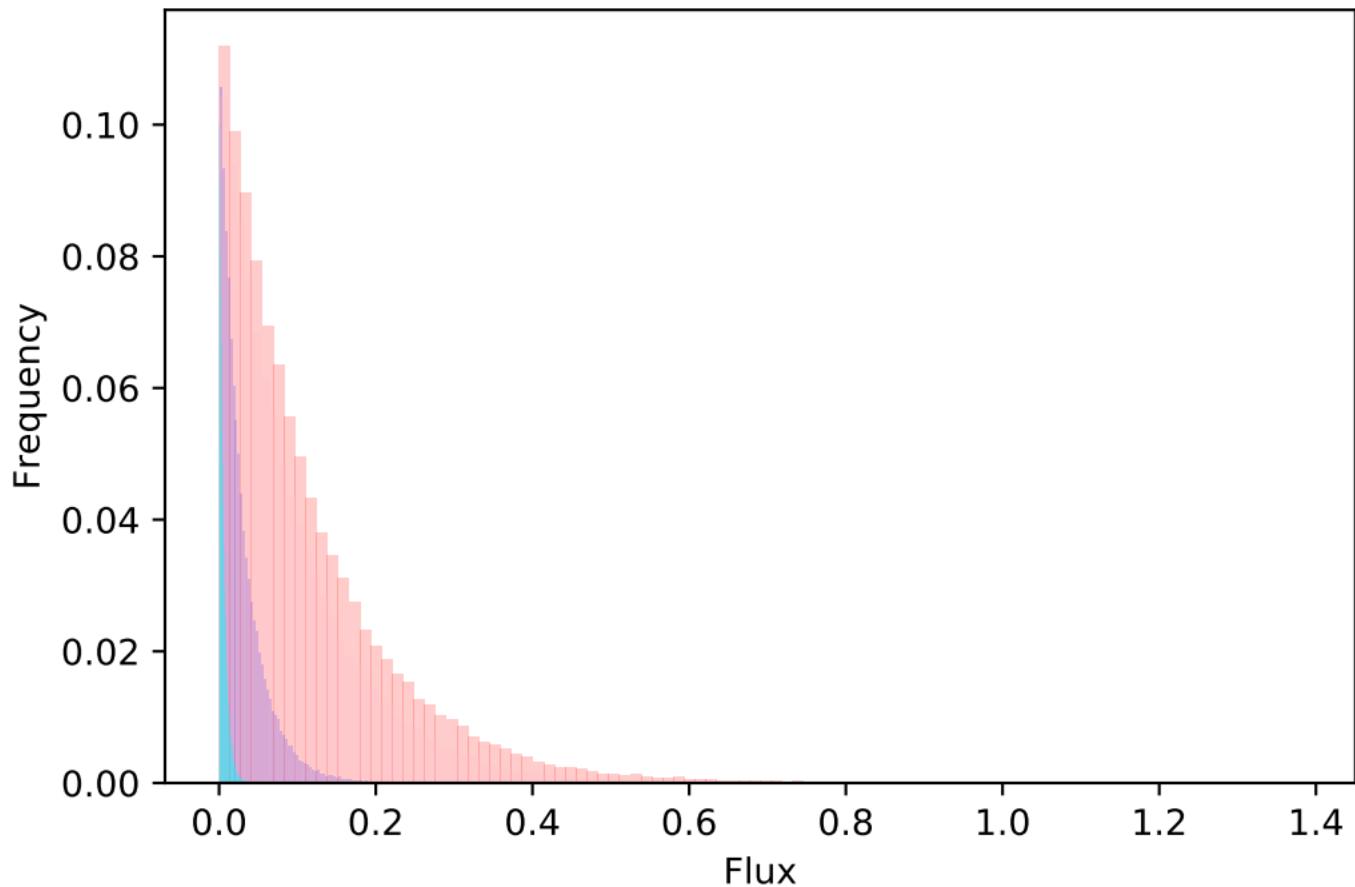
414 : Trp\_c <=> Trp\_p



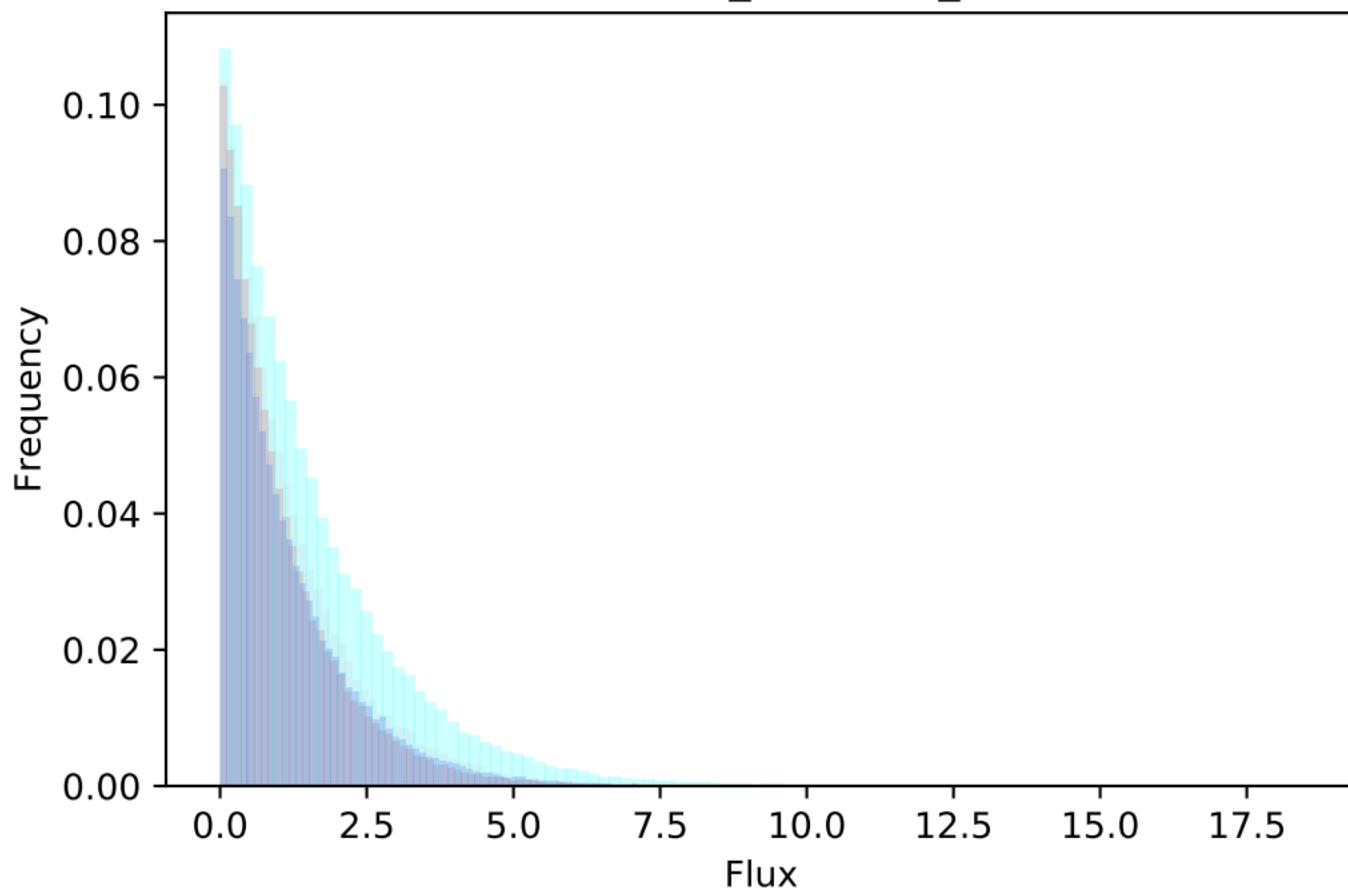
415 : Tyr\_c <=> Tyr\_p



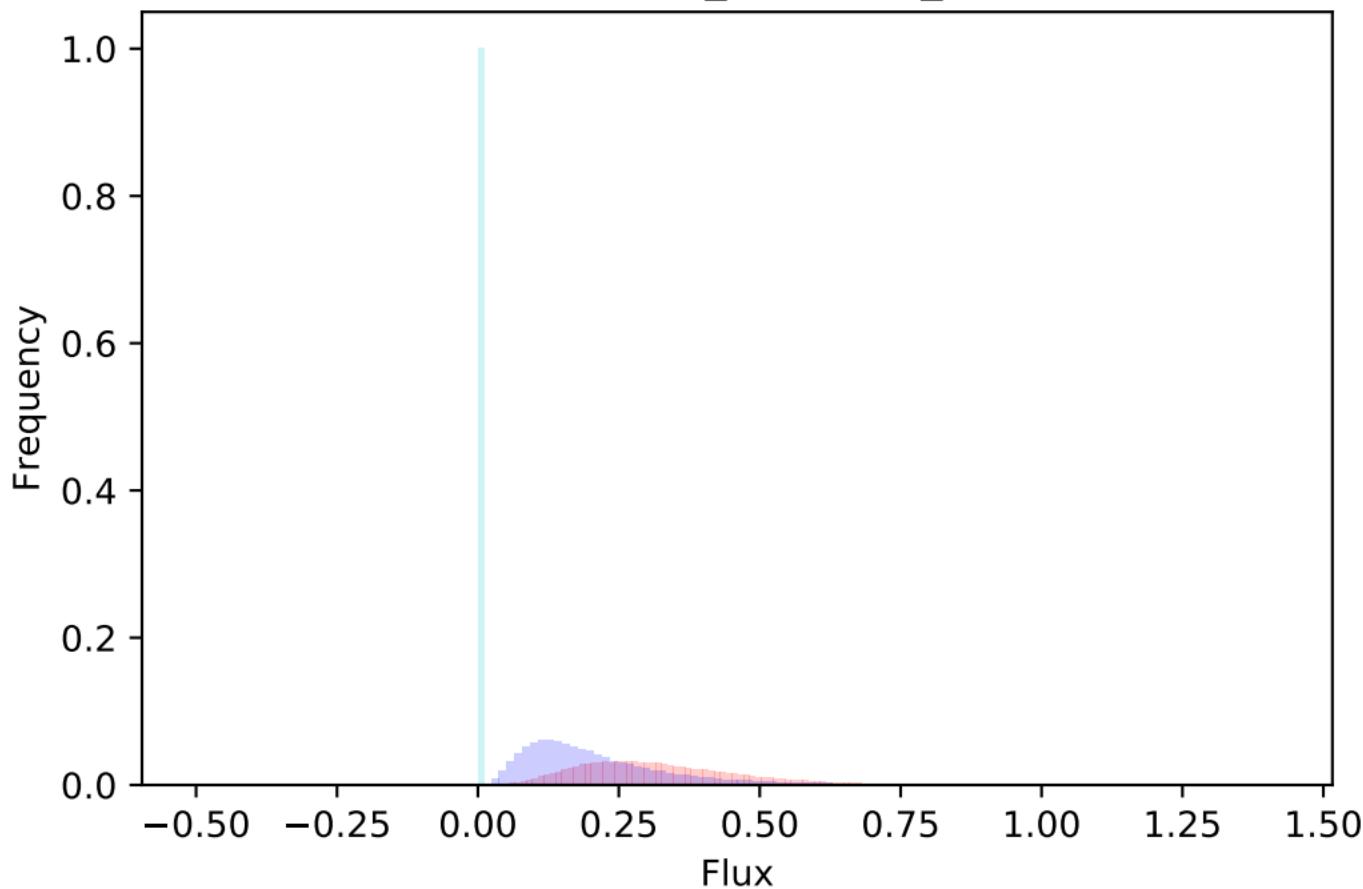
416 : Val\_c <=> Val\_p



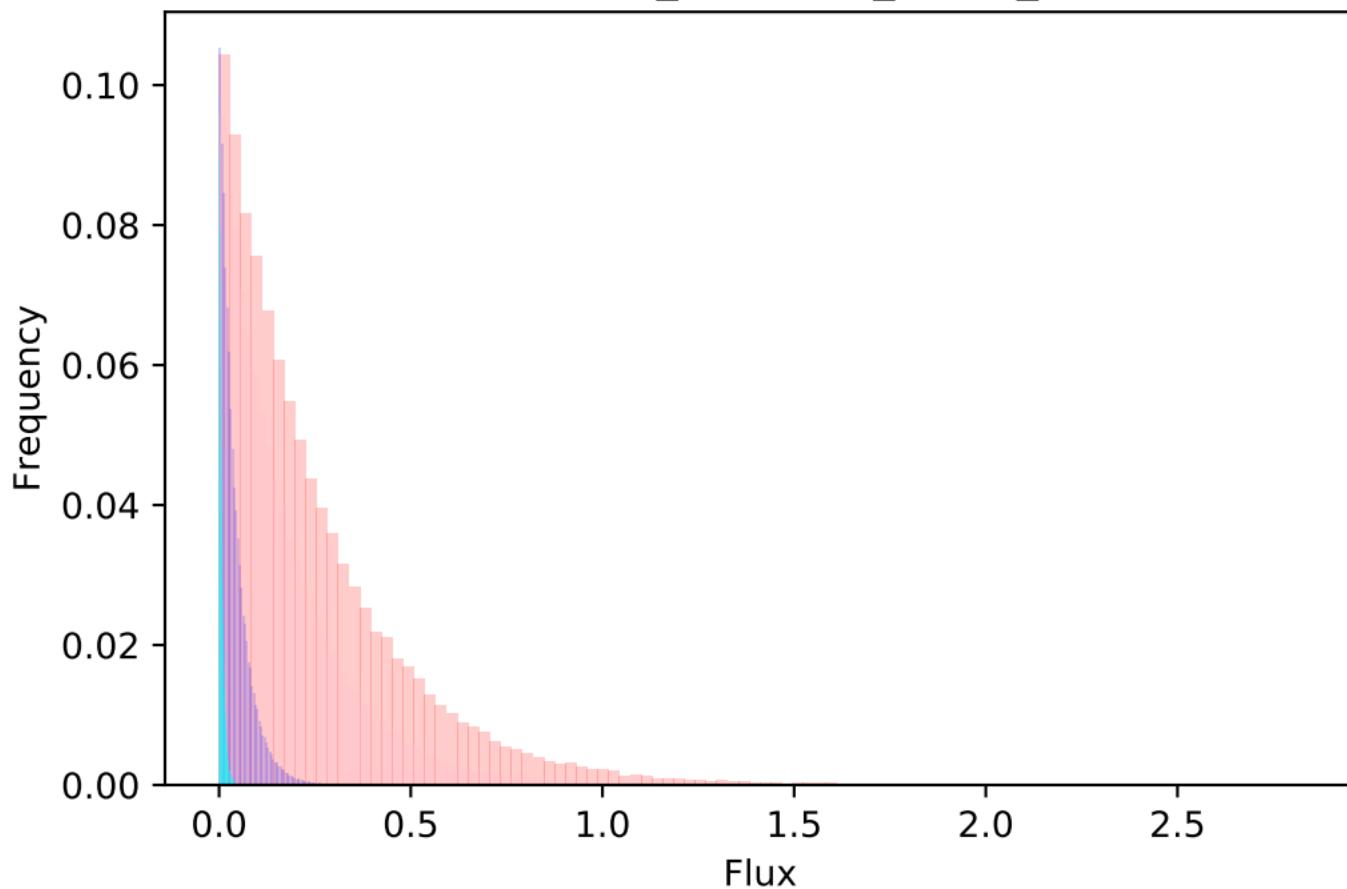
417 : Ala\_h --> Ala\_c



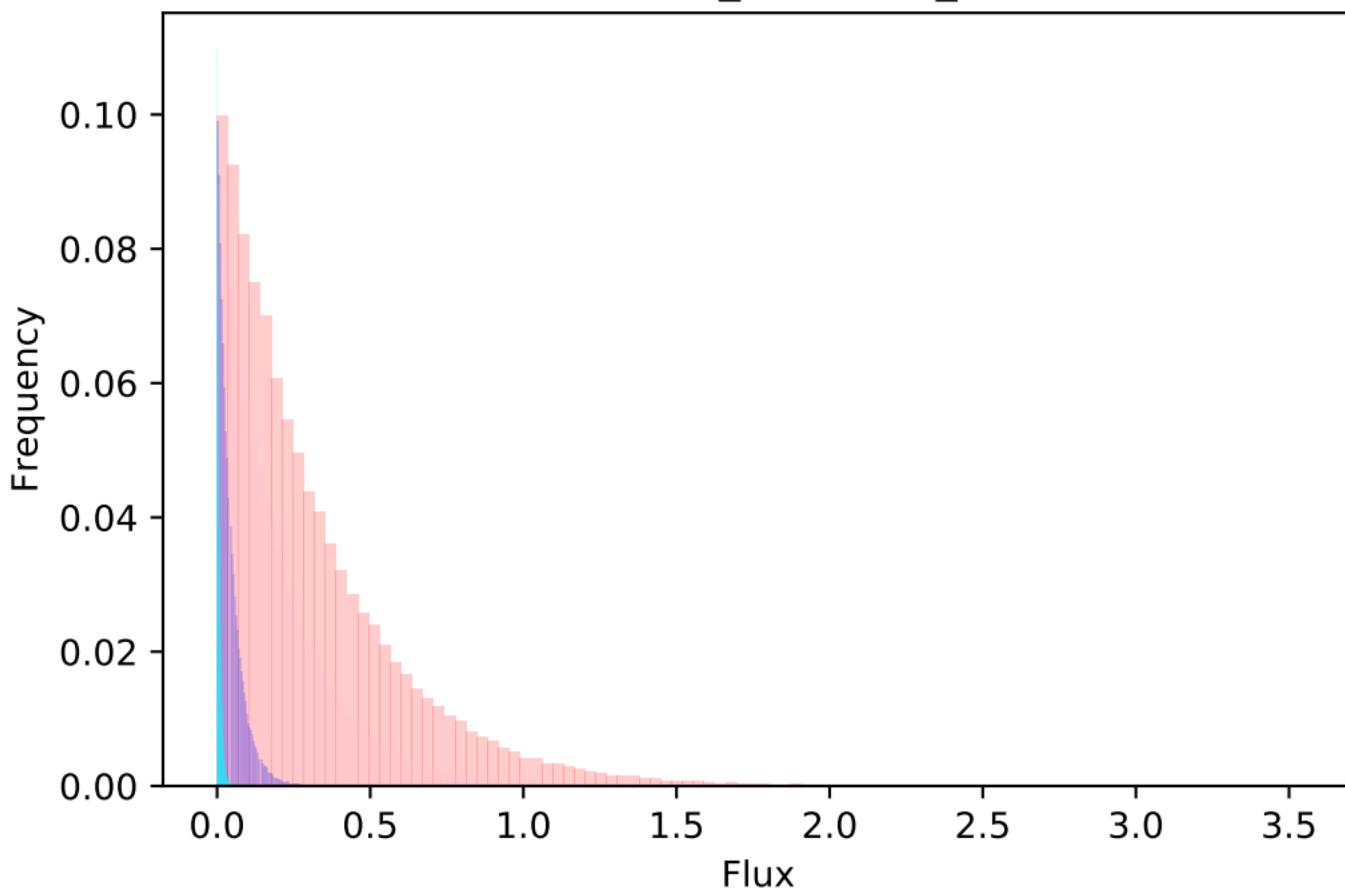
418 : Arg\_h --> Arg\_c



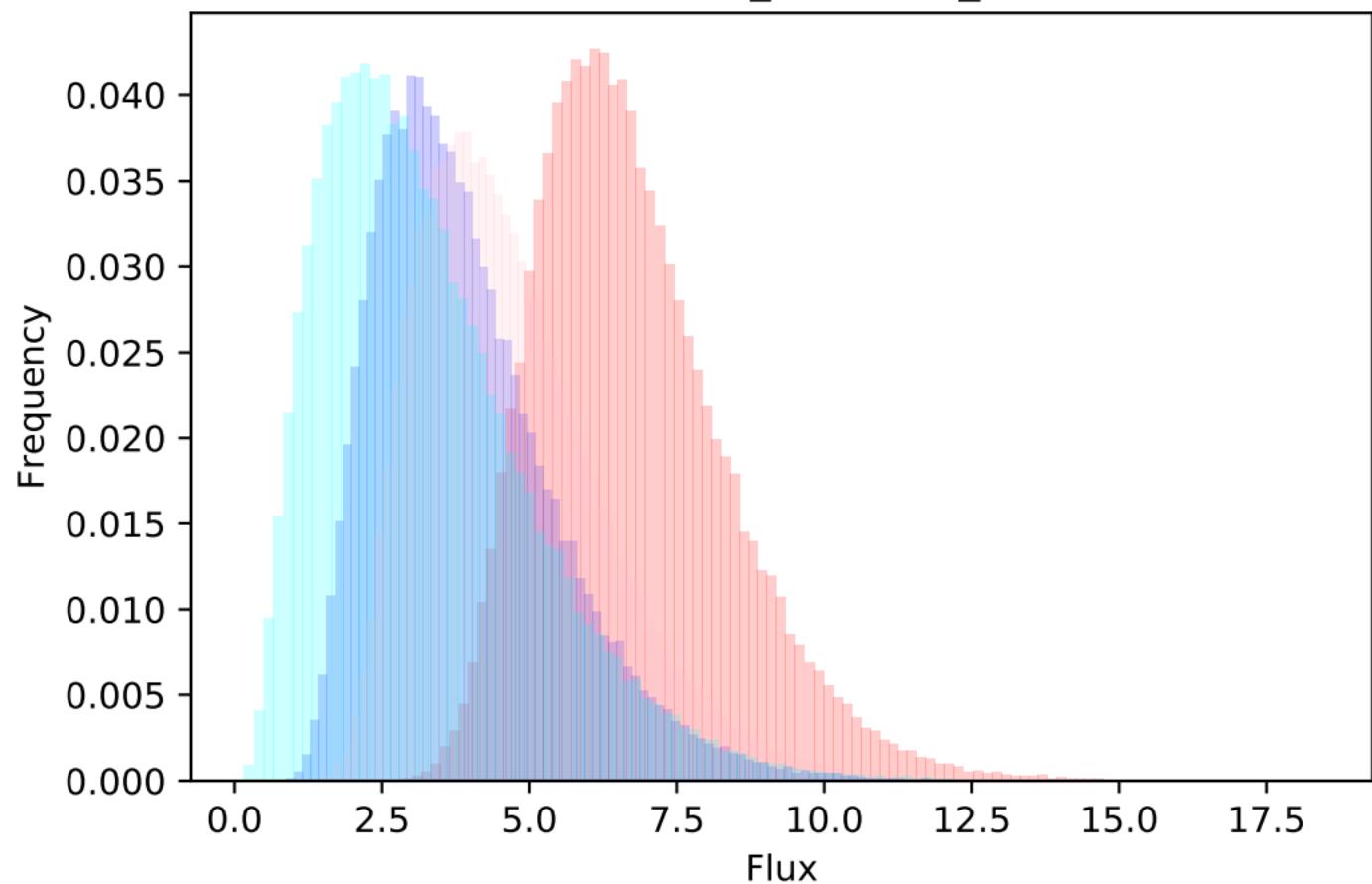
419 : Asn\_c --> Asn\_h + H\_h



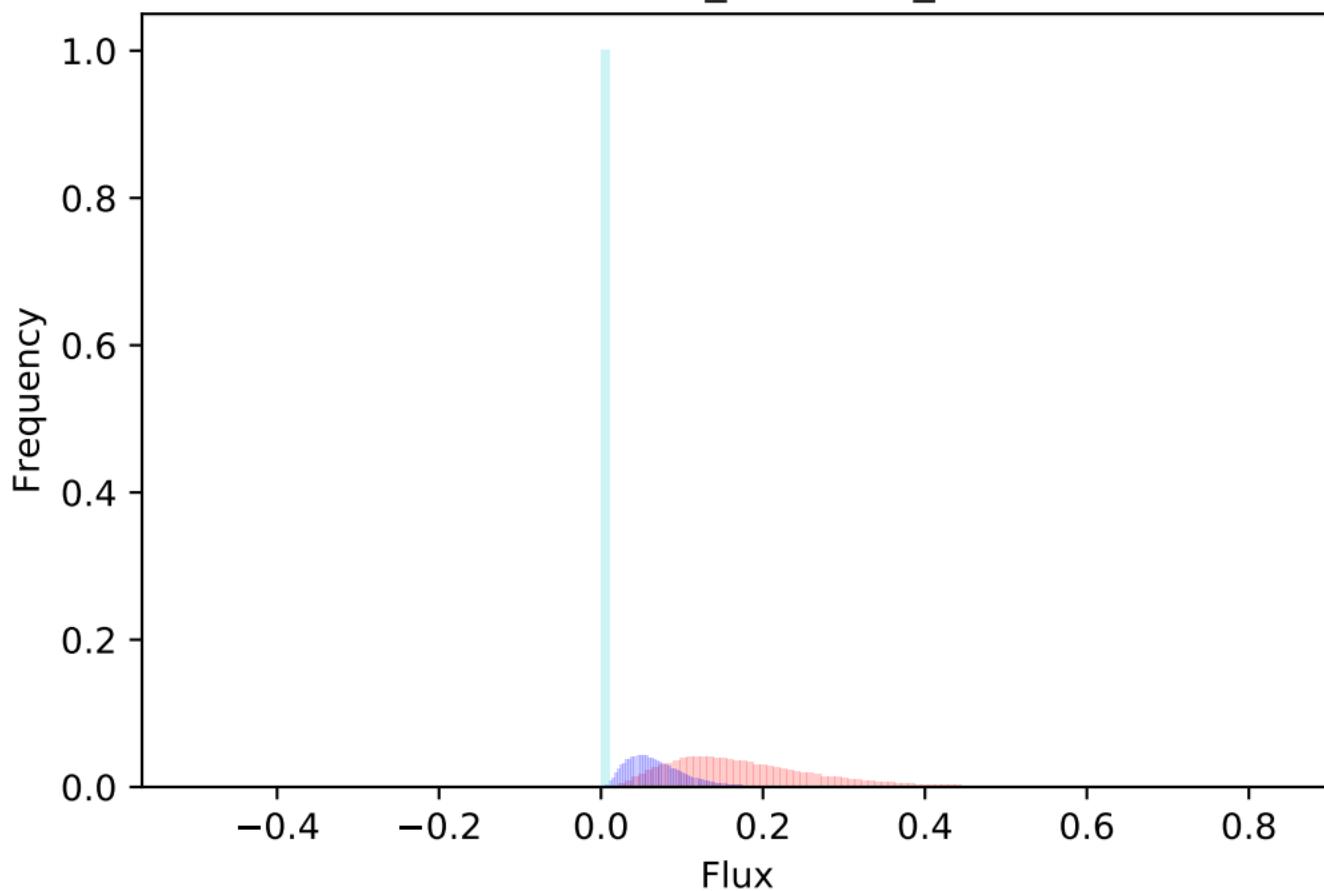
420 : Asn\_c --> Asn\_m



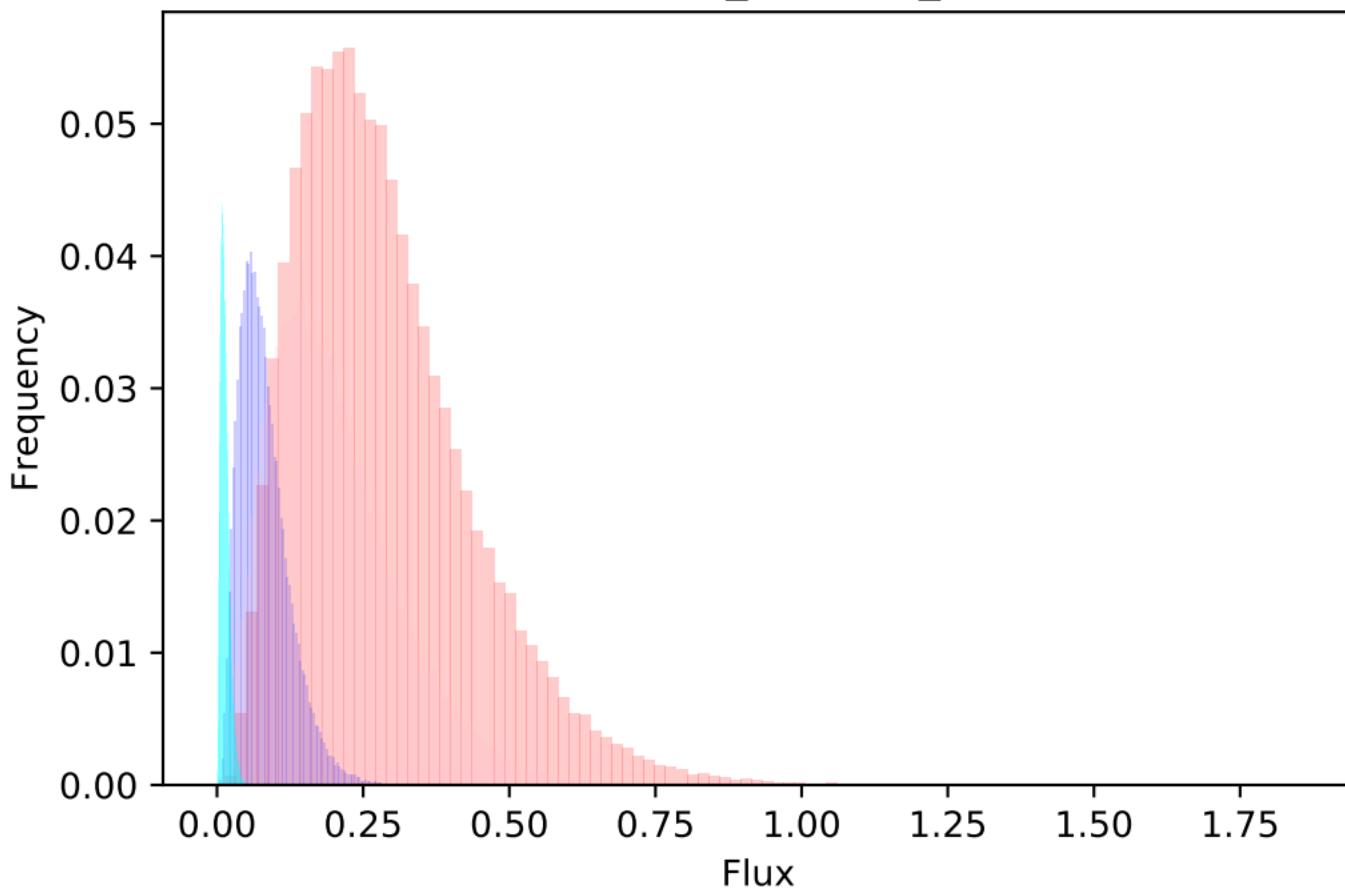
421 : Glu\_c --> Glu\_h



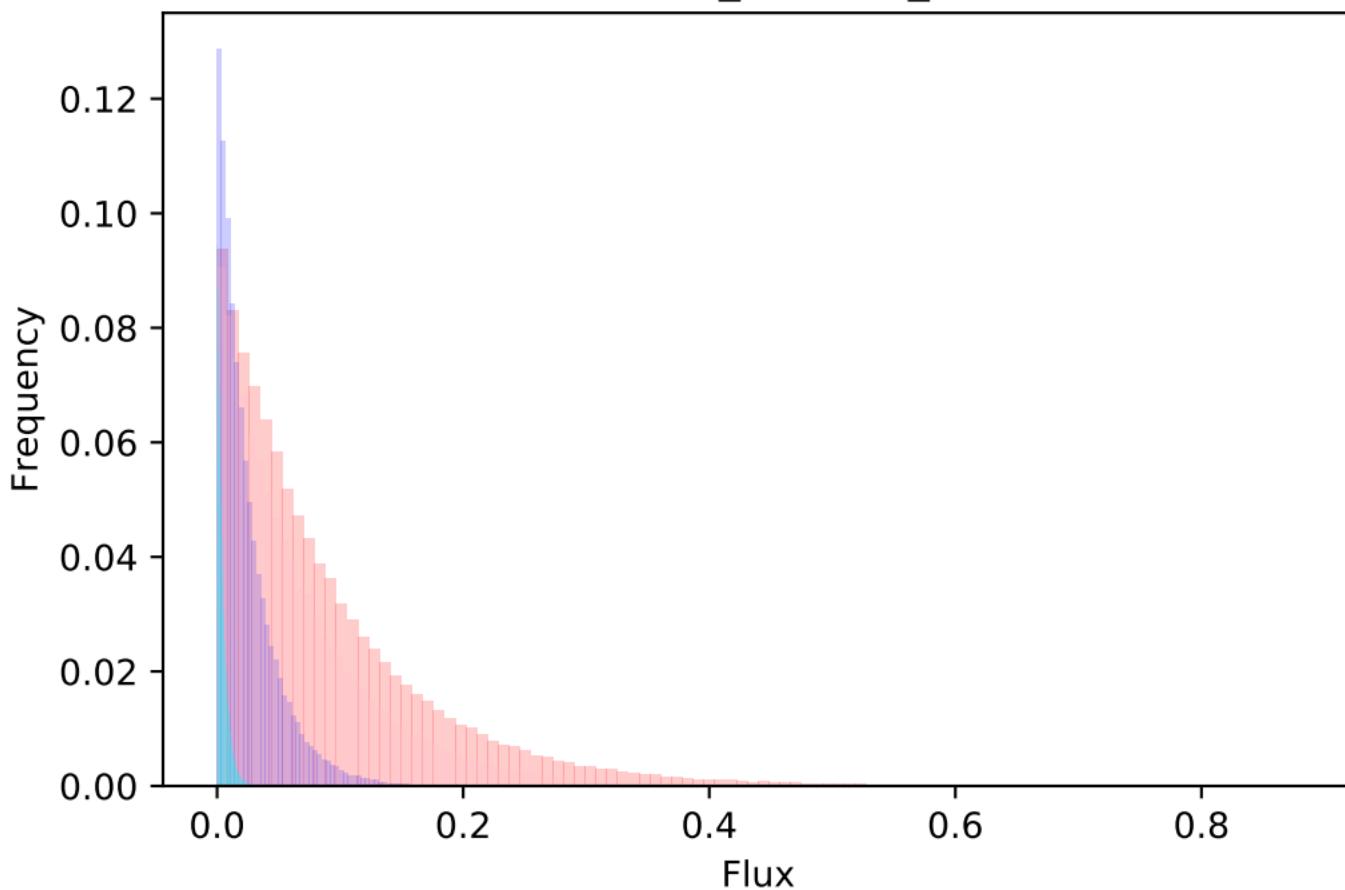
422 : His\_h --> His\_c



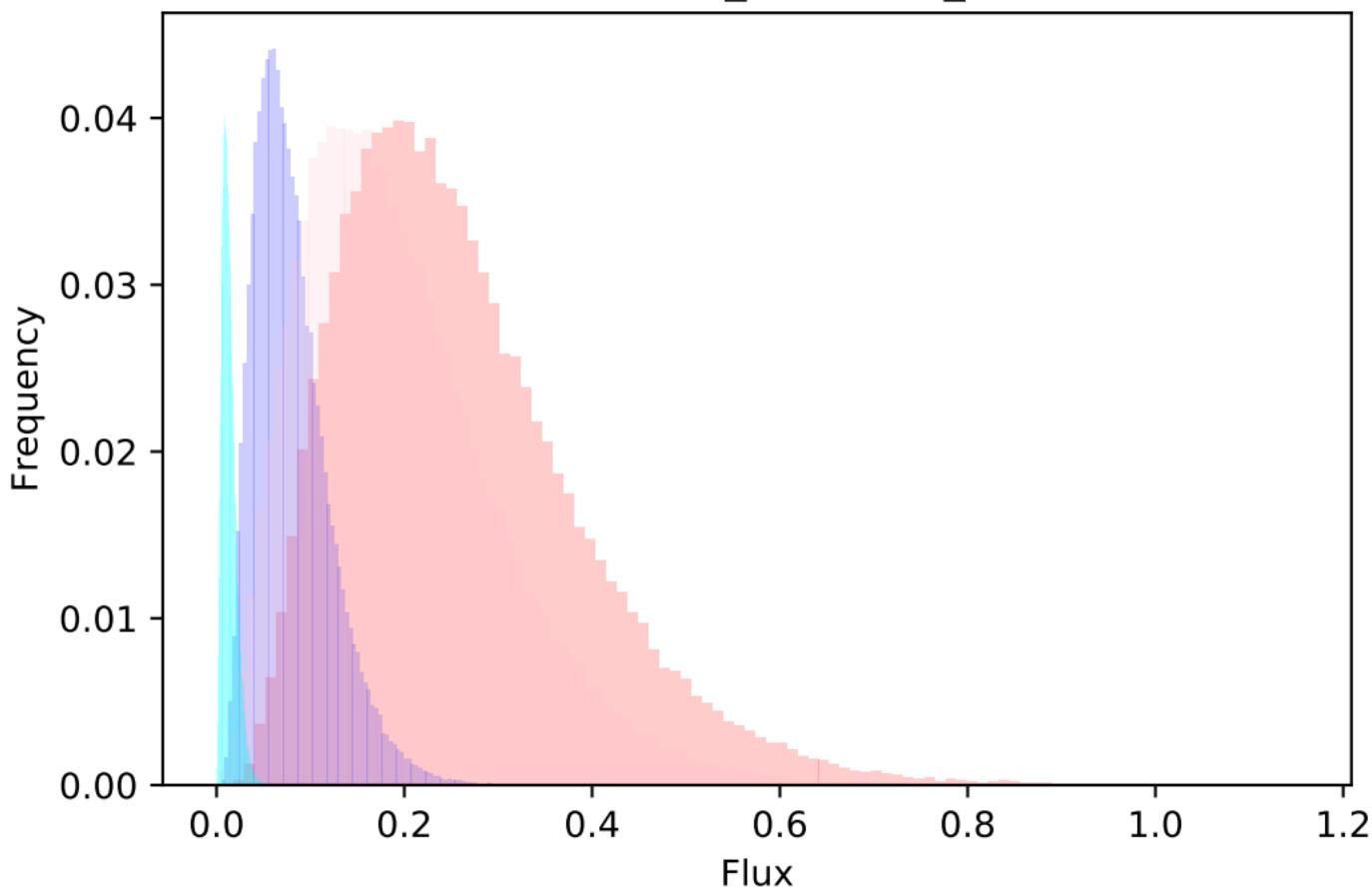
424 : ll e\_h --> ll e\_c



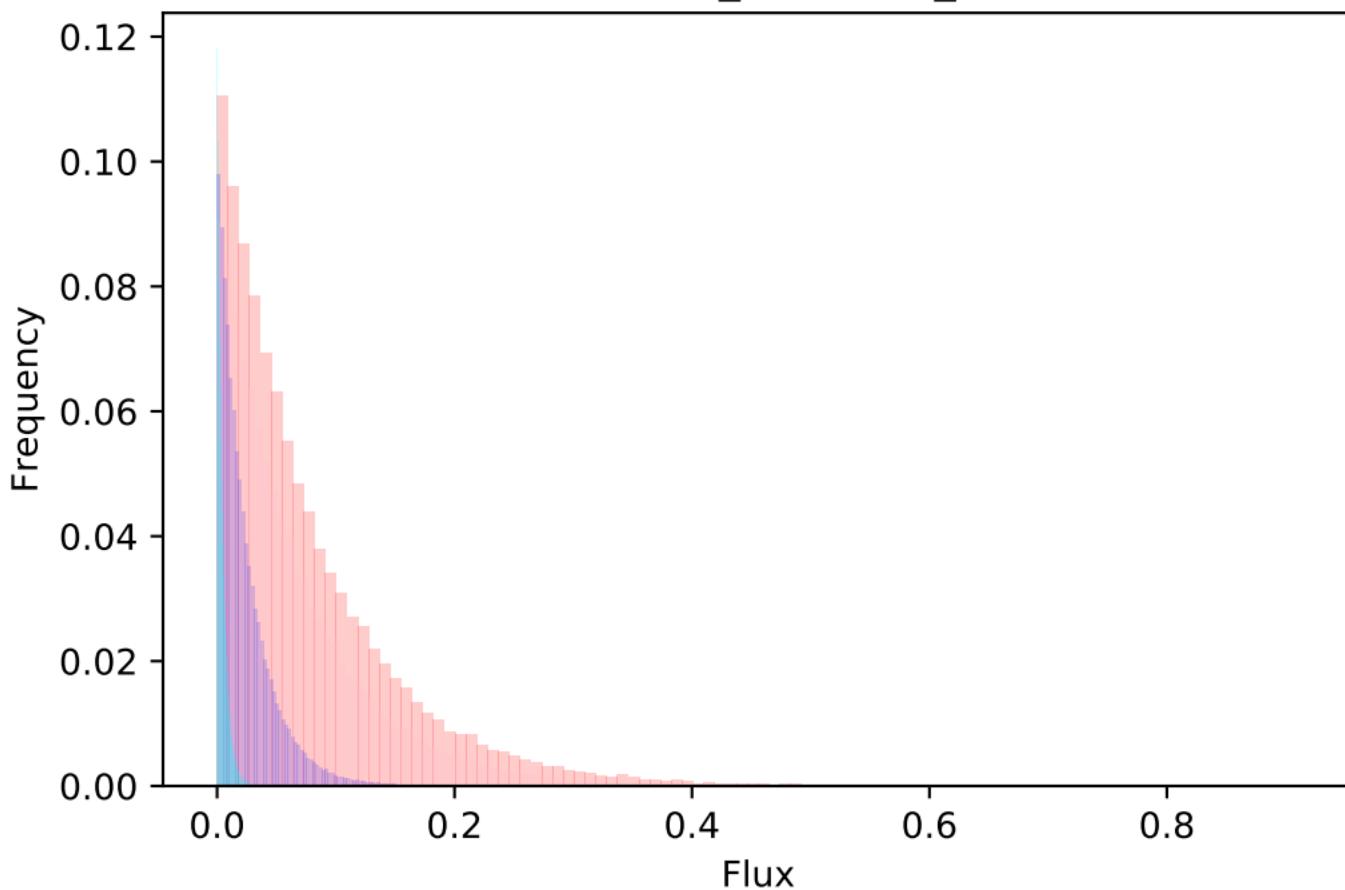
425 : lle\_c --> lle\_m



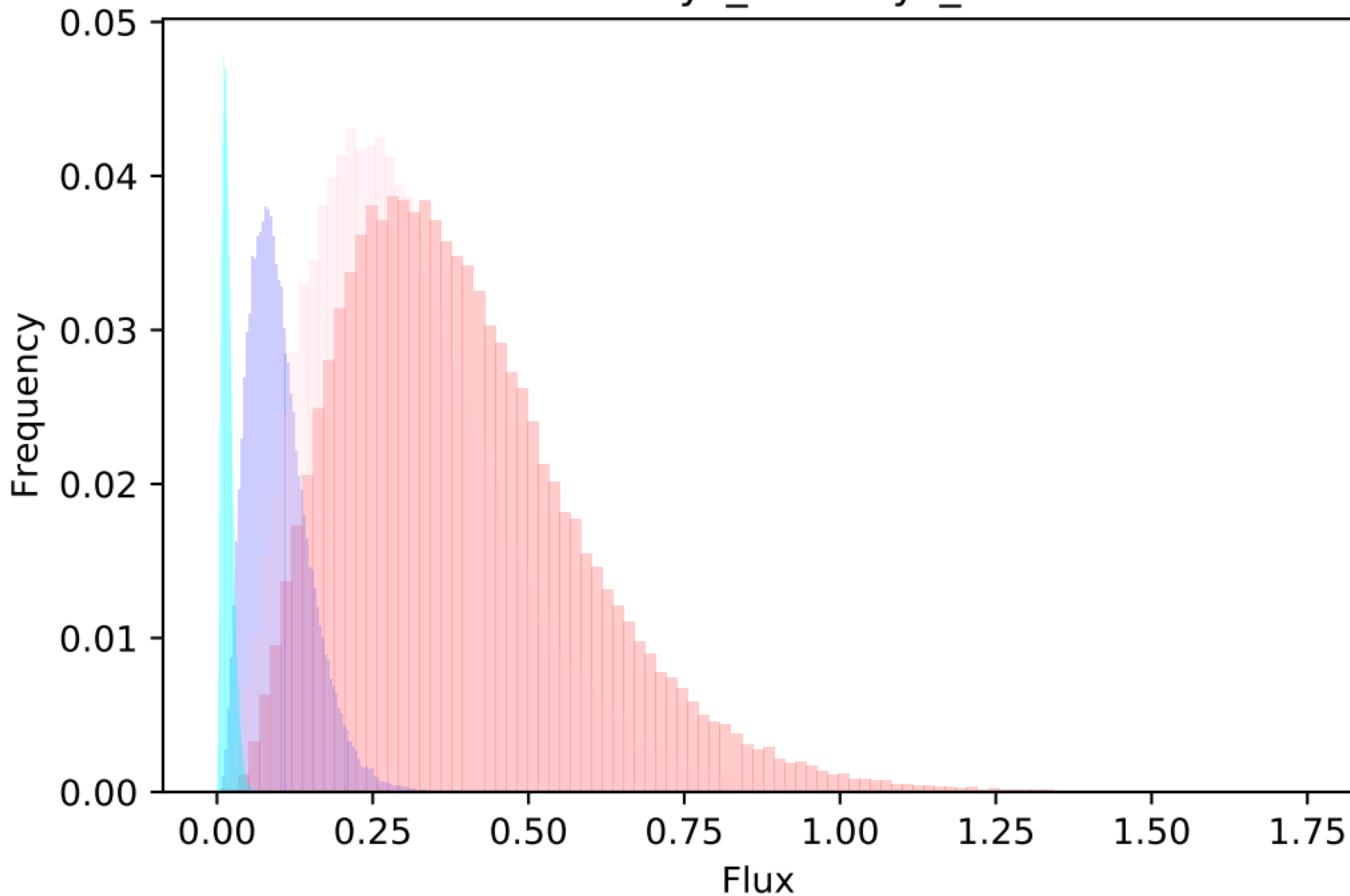
426 : Leu\_h --> Leu\_c



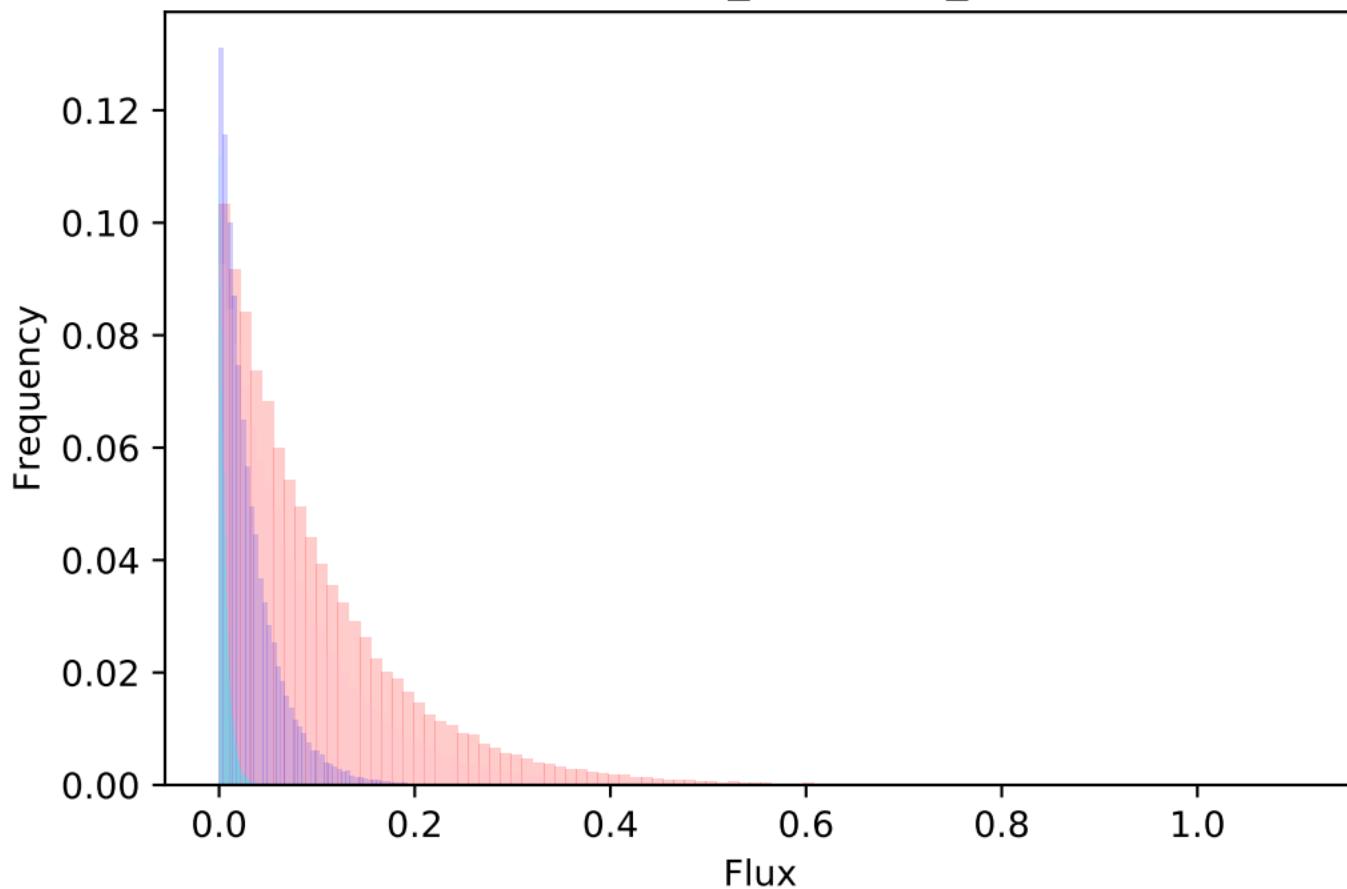
427 : Leu\_c --> Leu\_m



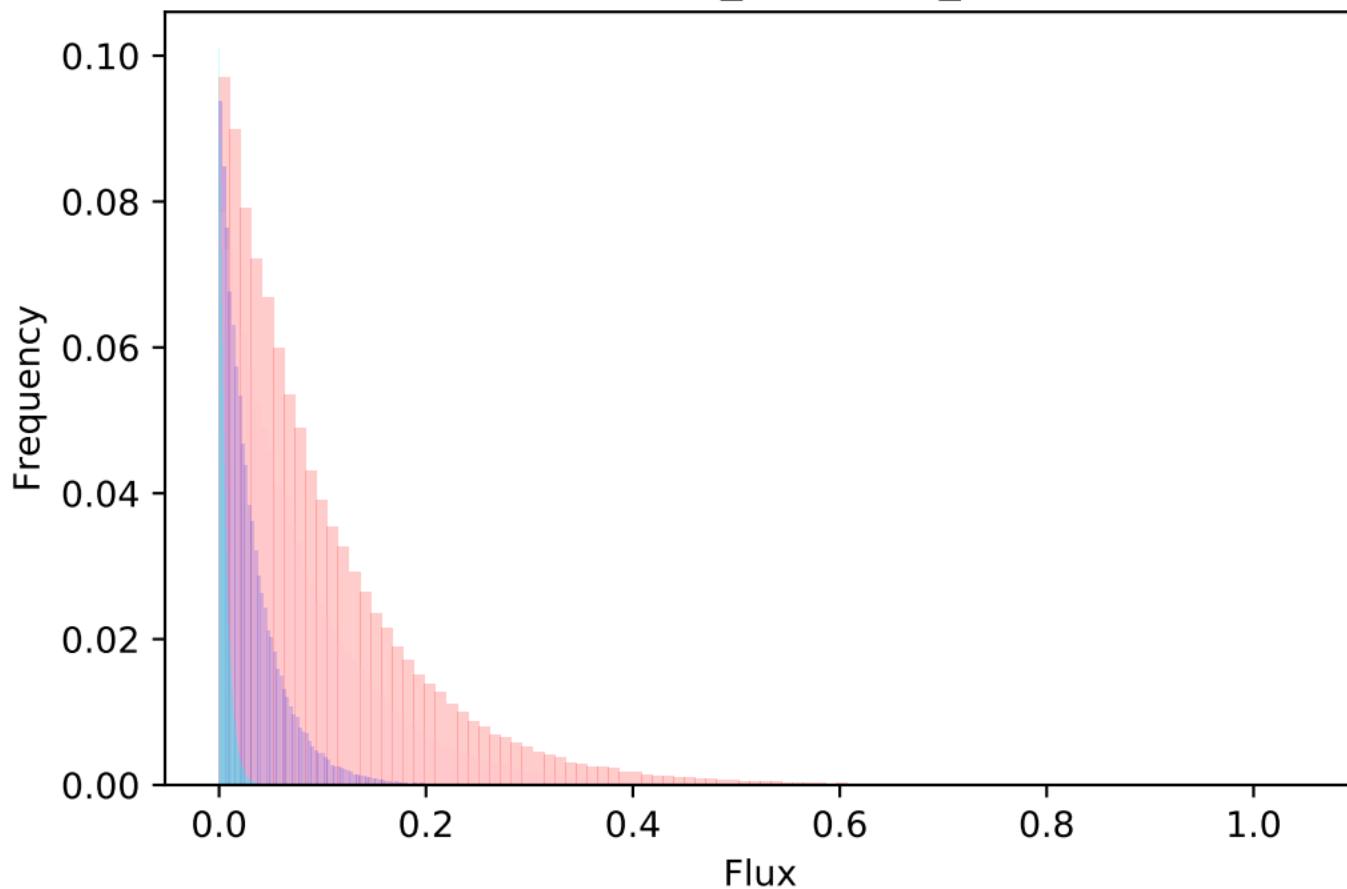
428 : Lys\_h --> Lys\_c



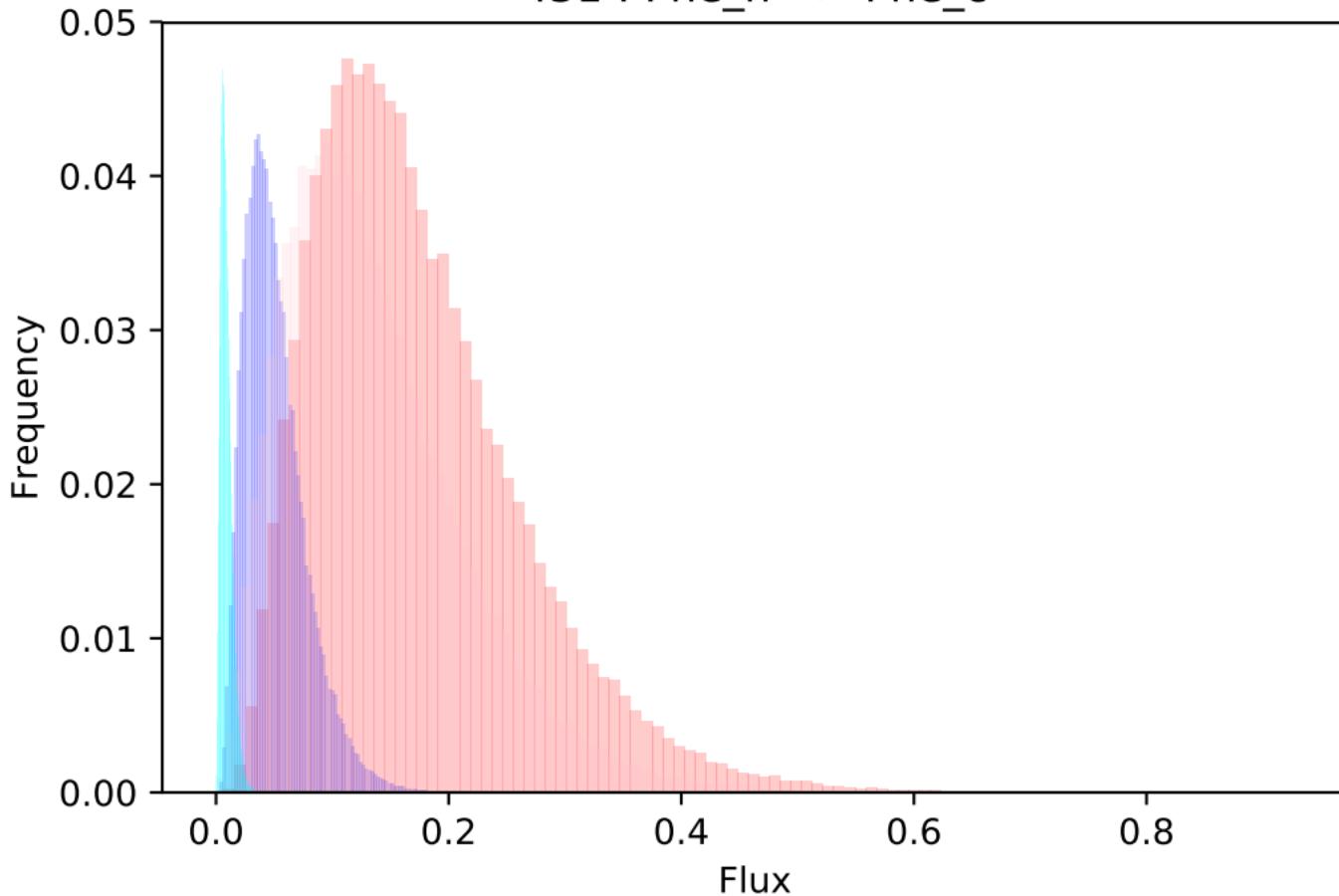
429 : Met\_c --> Met\_h



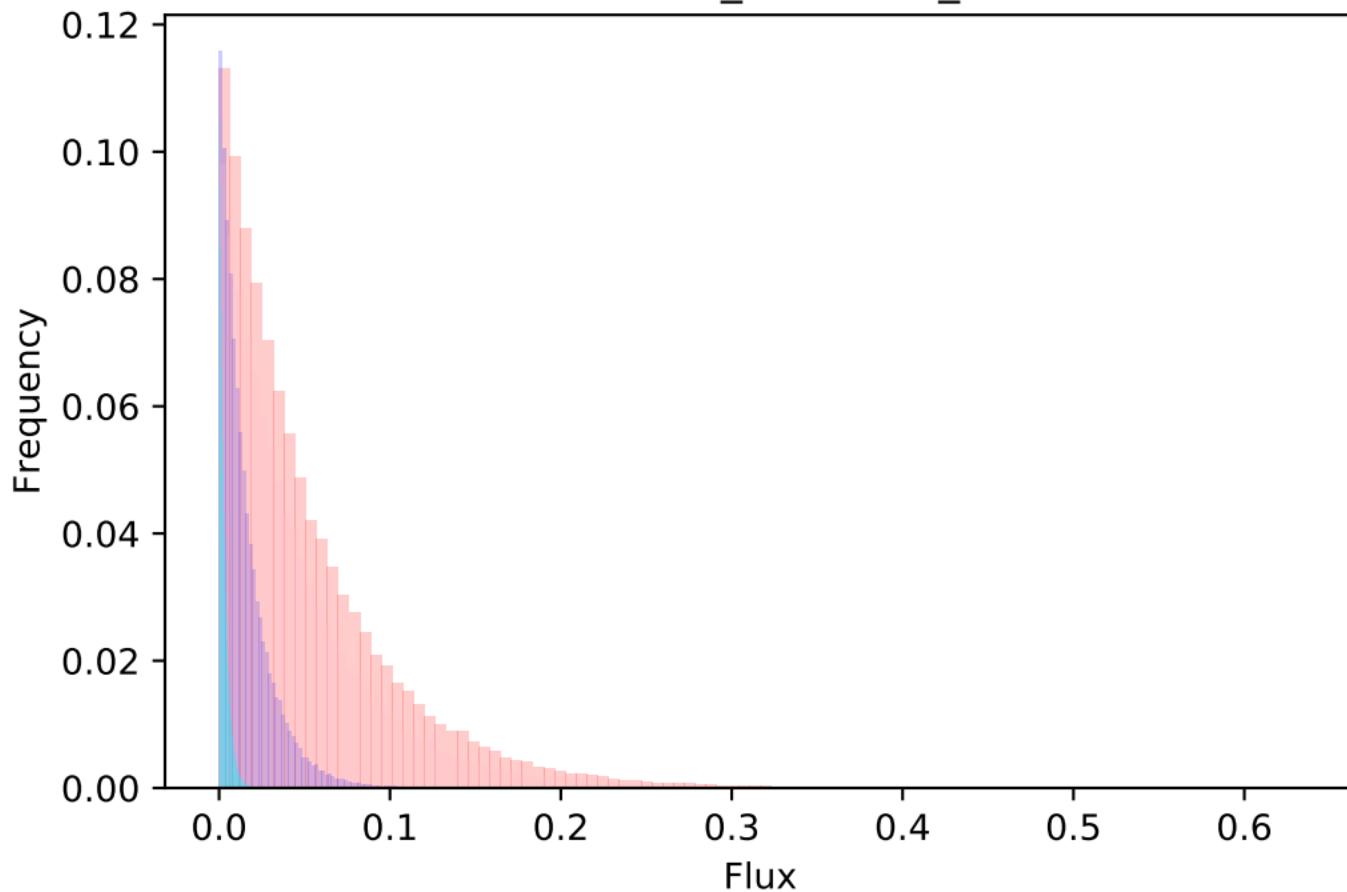
430 : Met\_c --> Met\_m



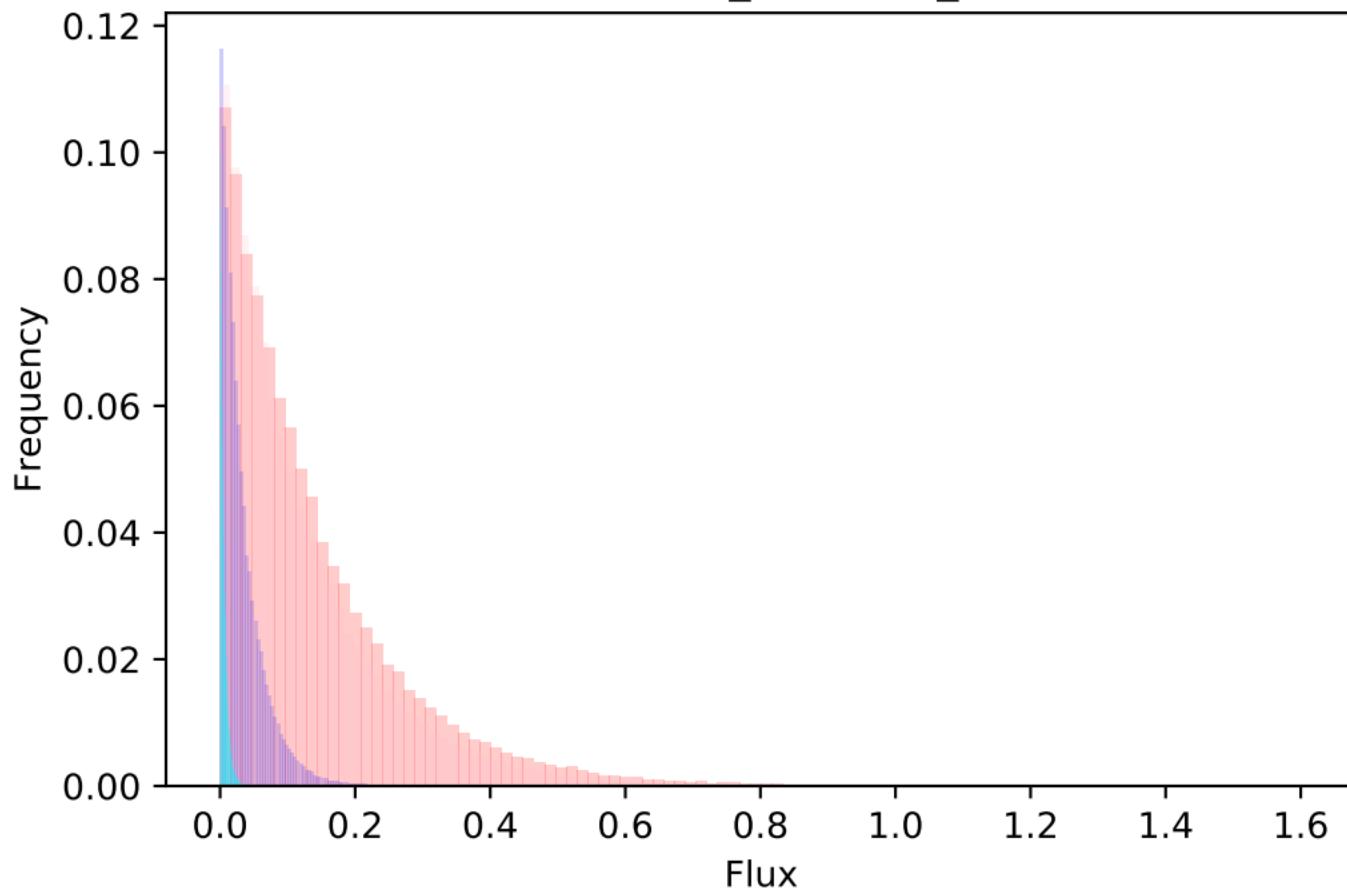
431 : Phe\_h --> Phe\_c



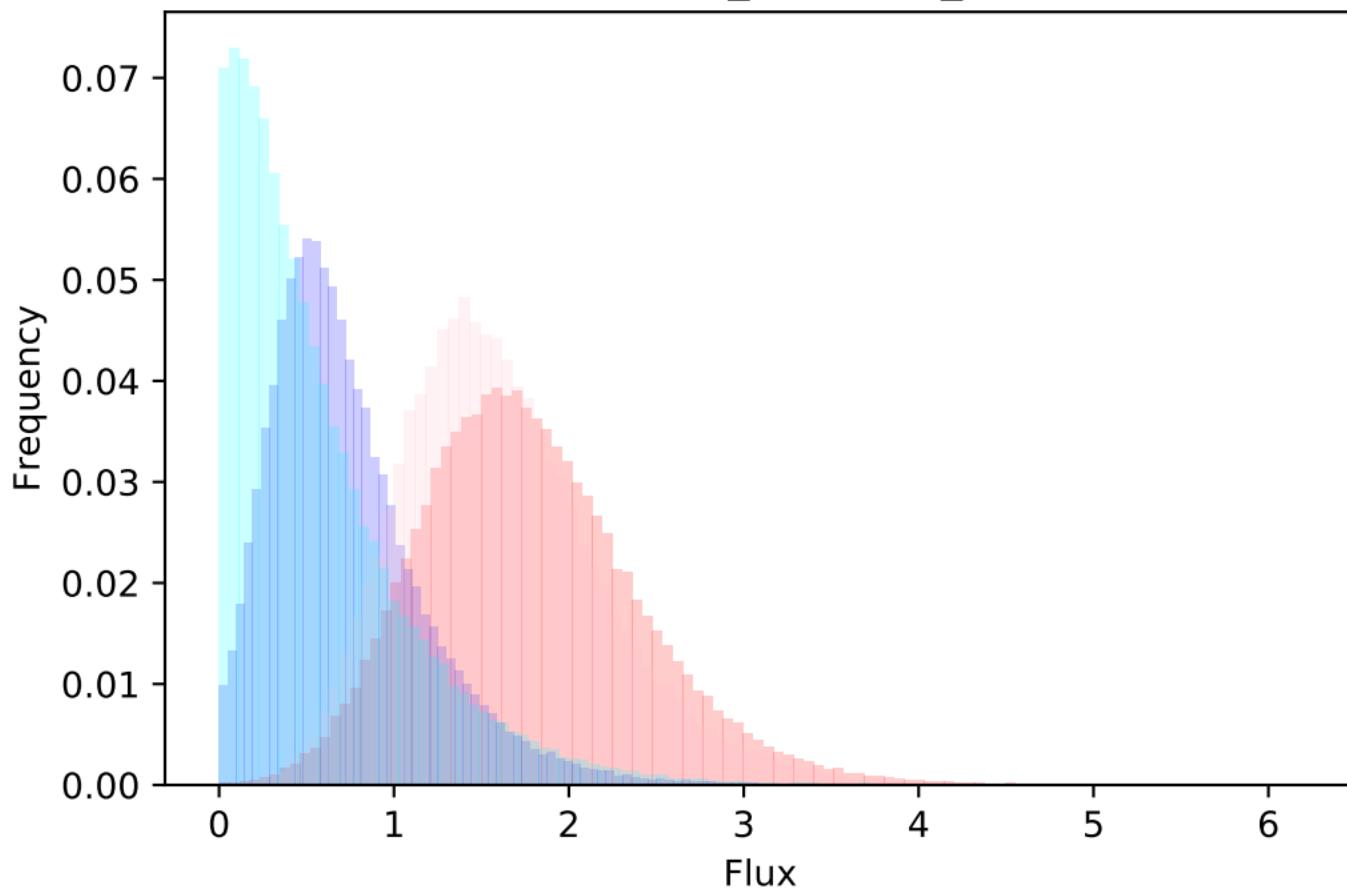
432 : Phe\_c --> Phe\_m



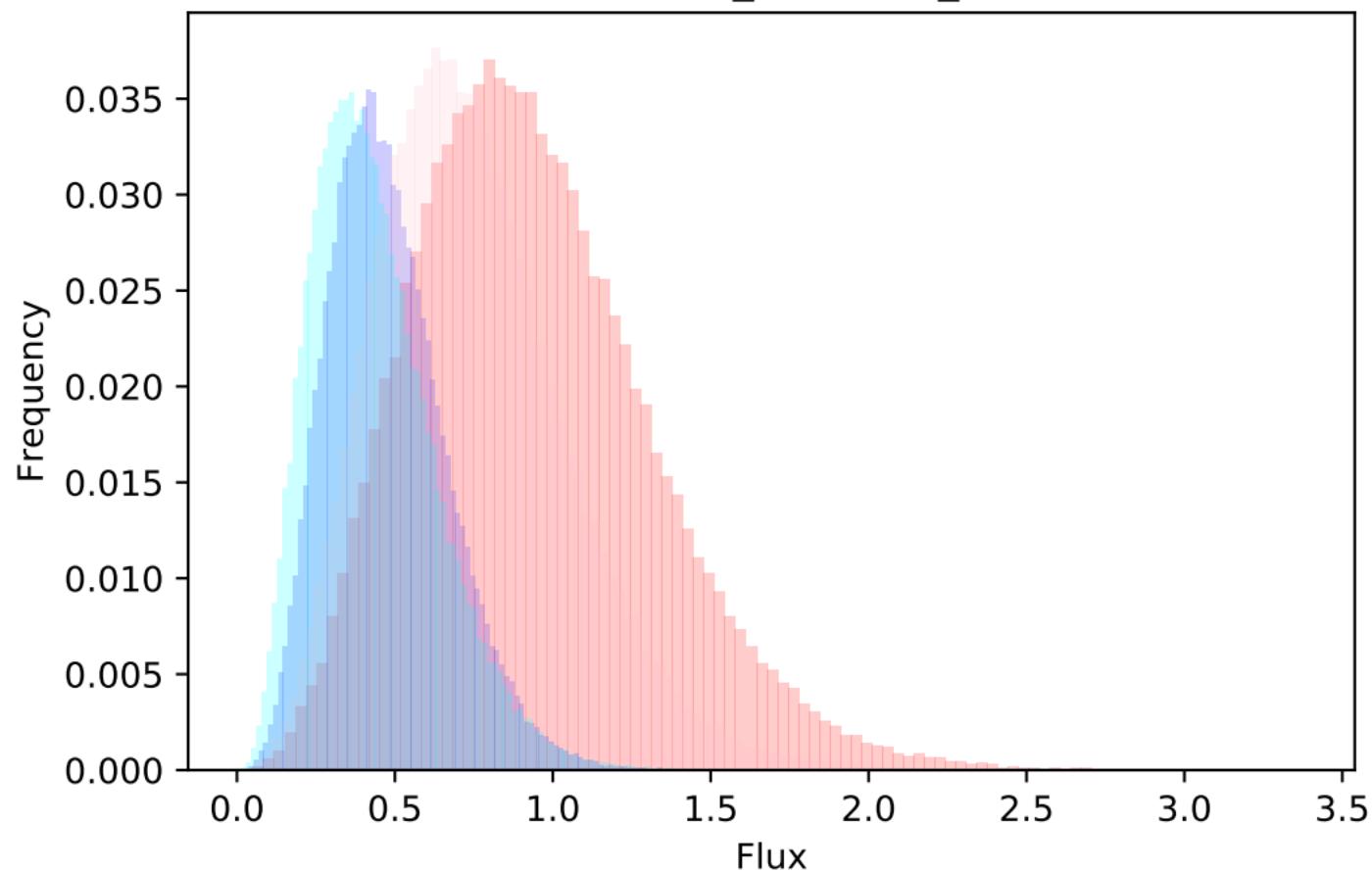
433 : Pro\_c --> Pro\_h



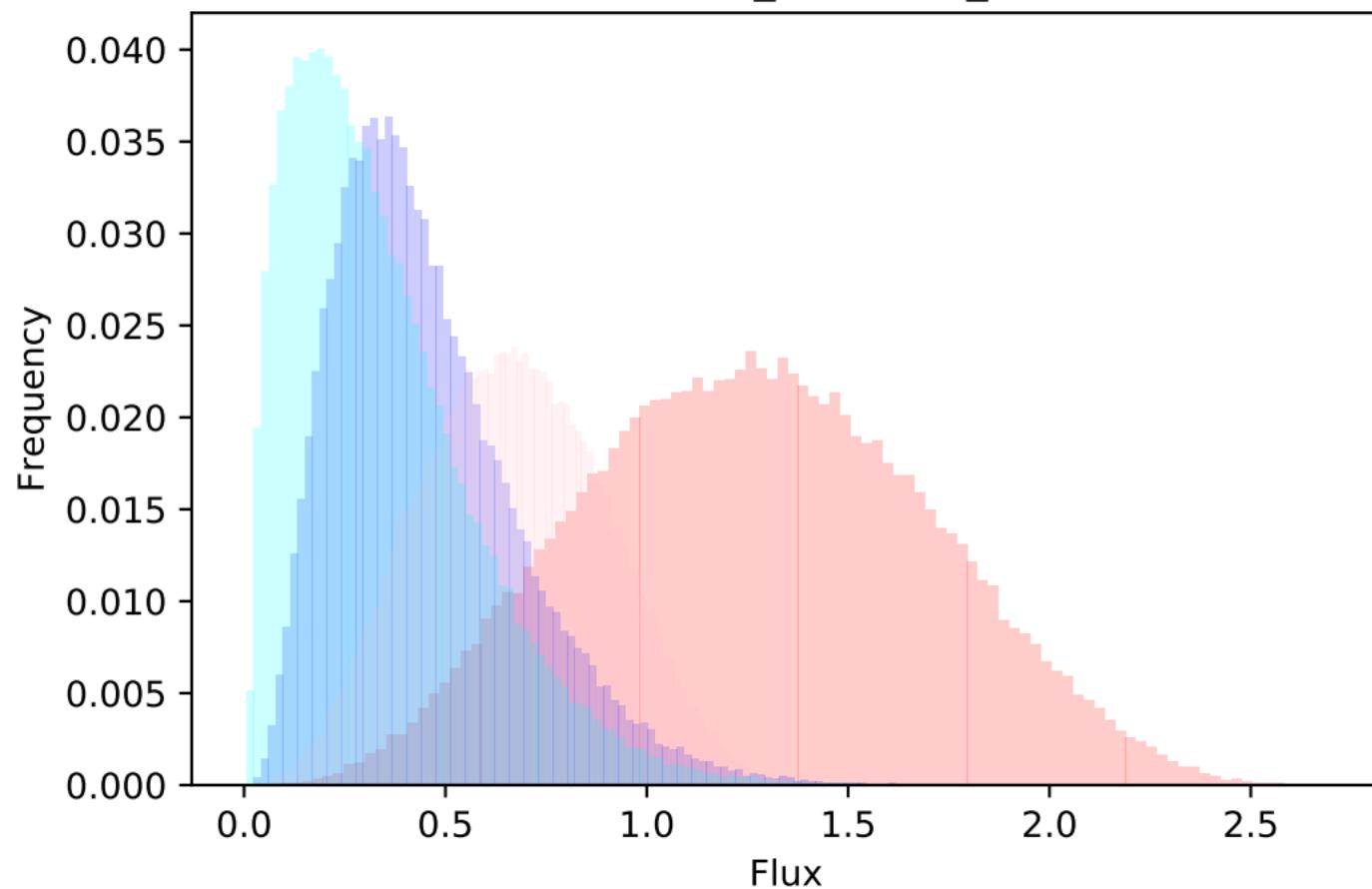
434 : Ser\_h --> Ser\_c



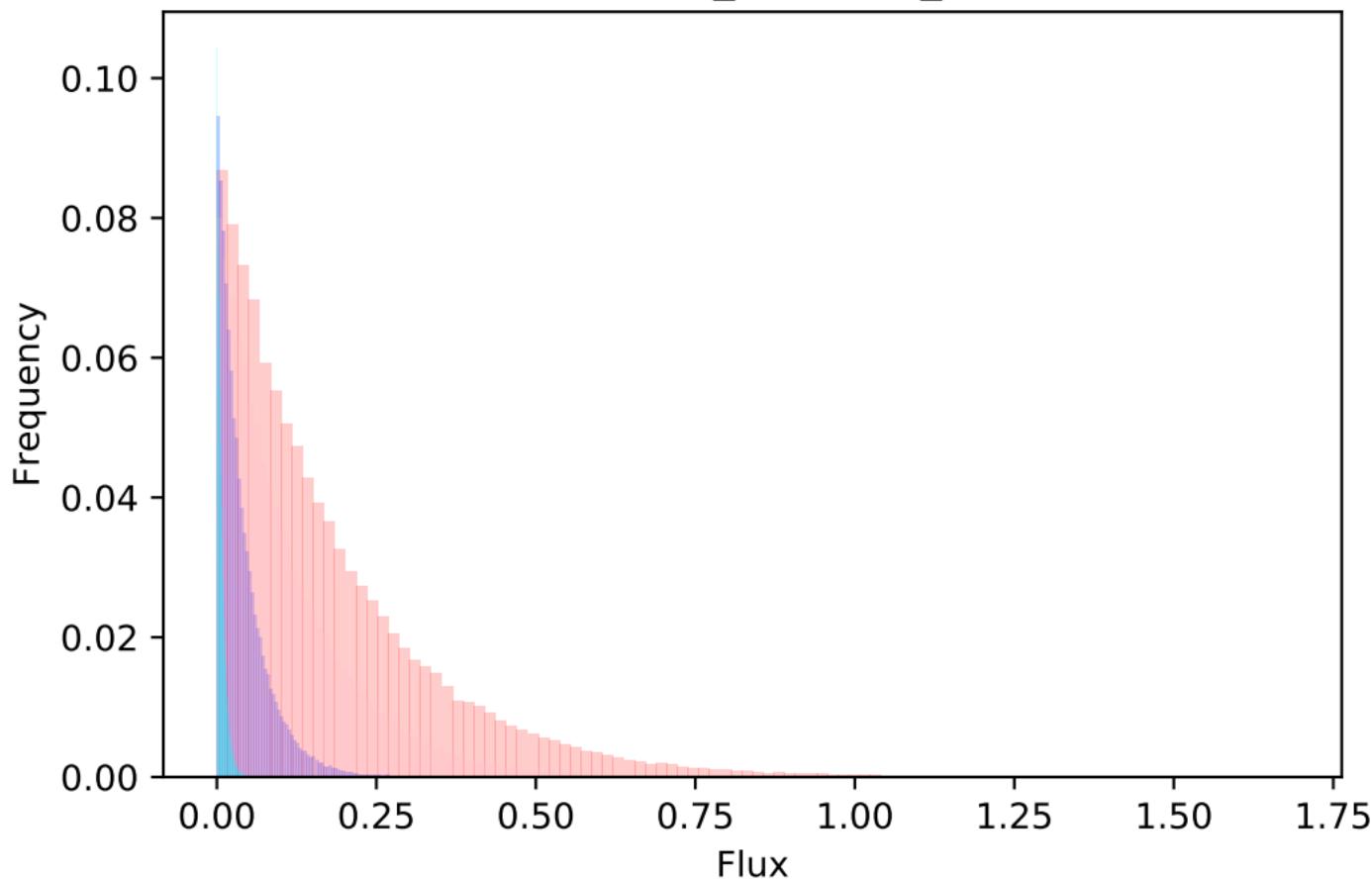
435 : Ser\_c --> Ser\_m



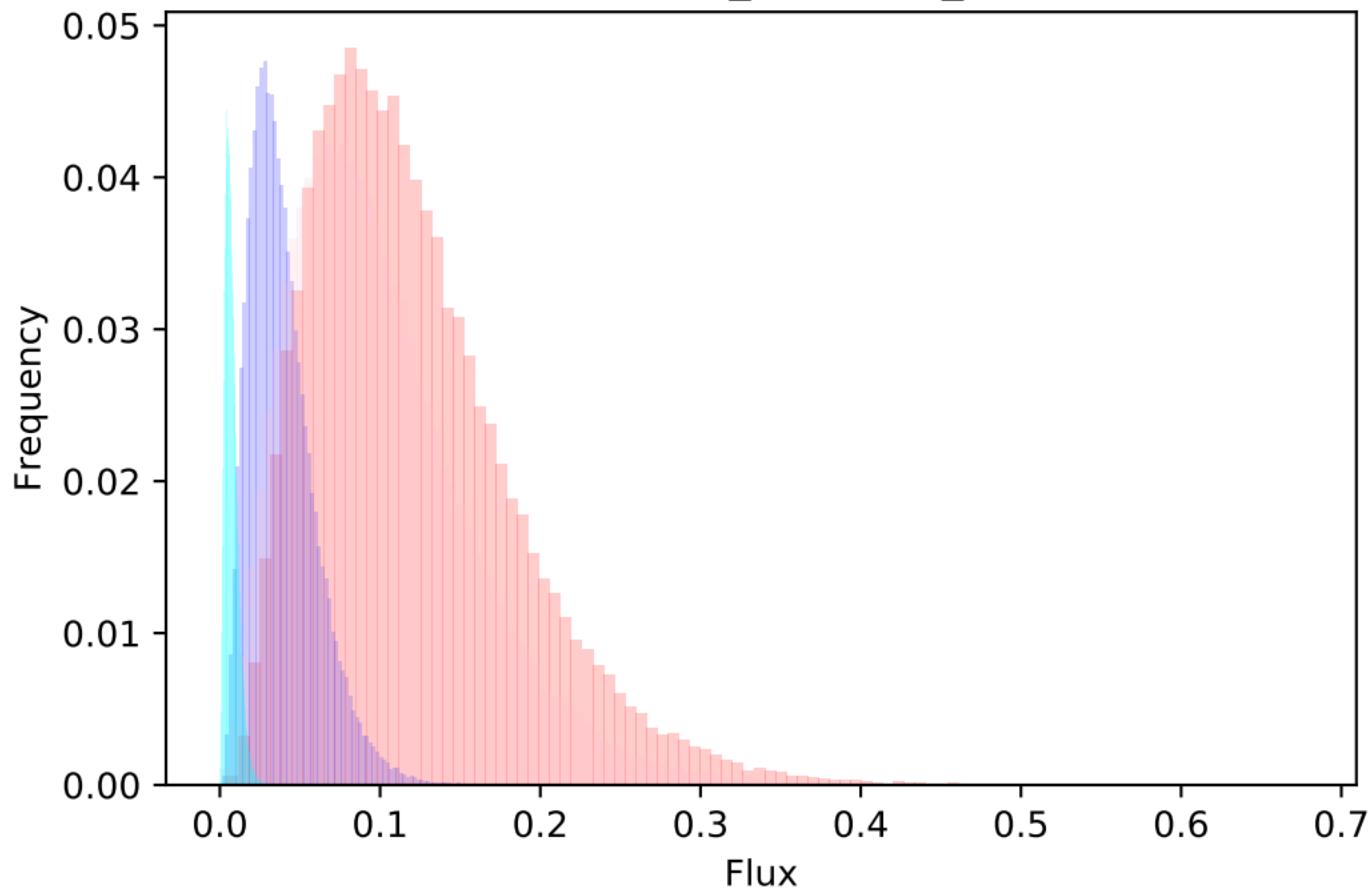
436 : Thr\_h --> Thr\_c



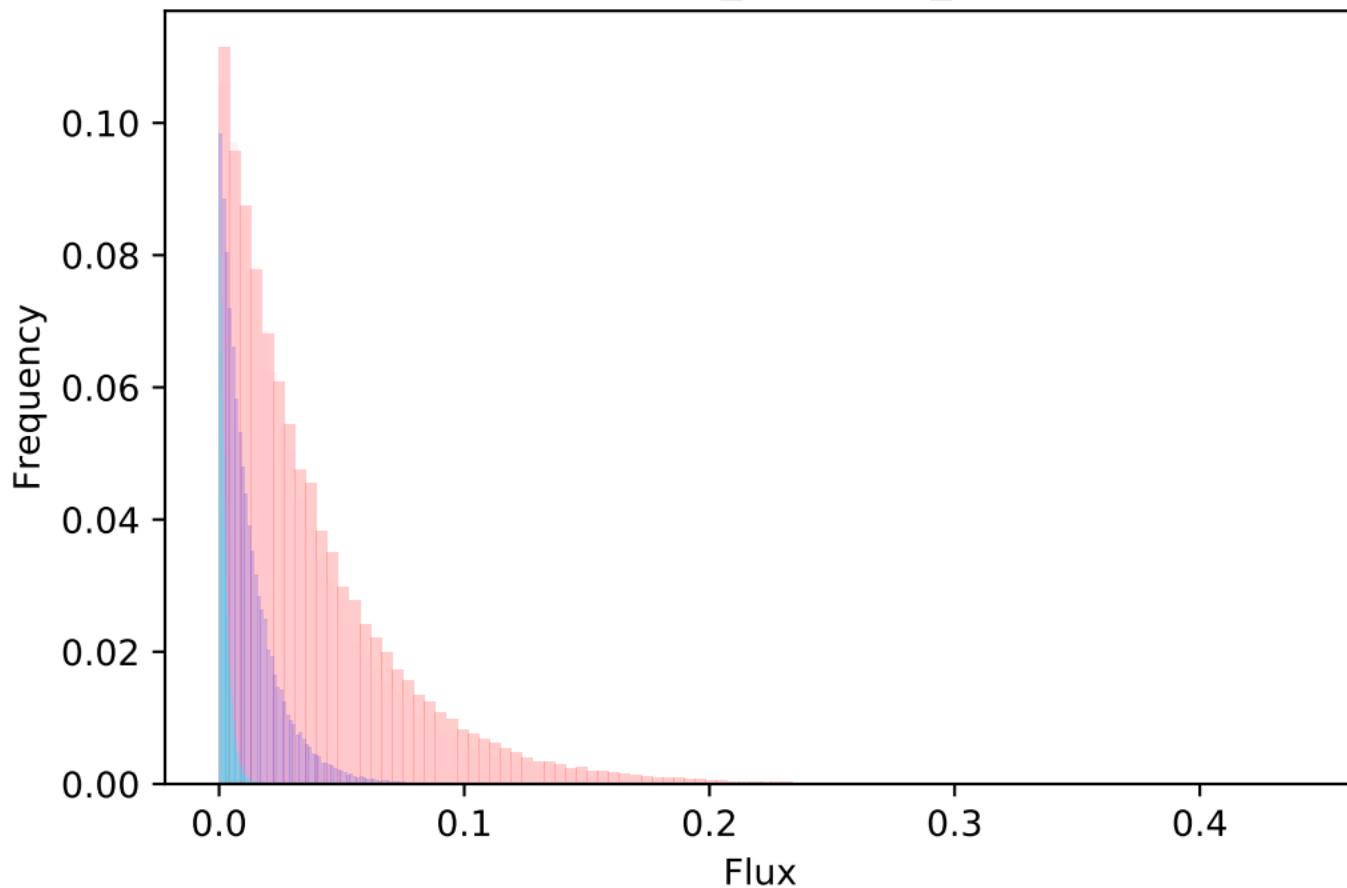
437 : Thr\_c --> Thr\_m



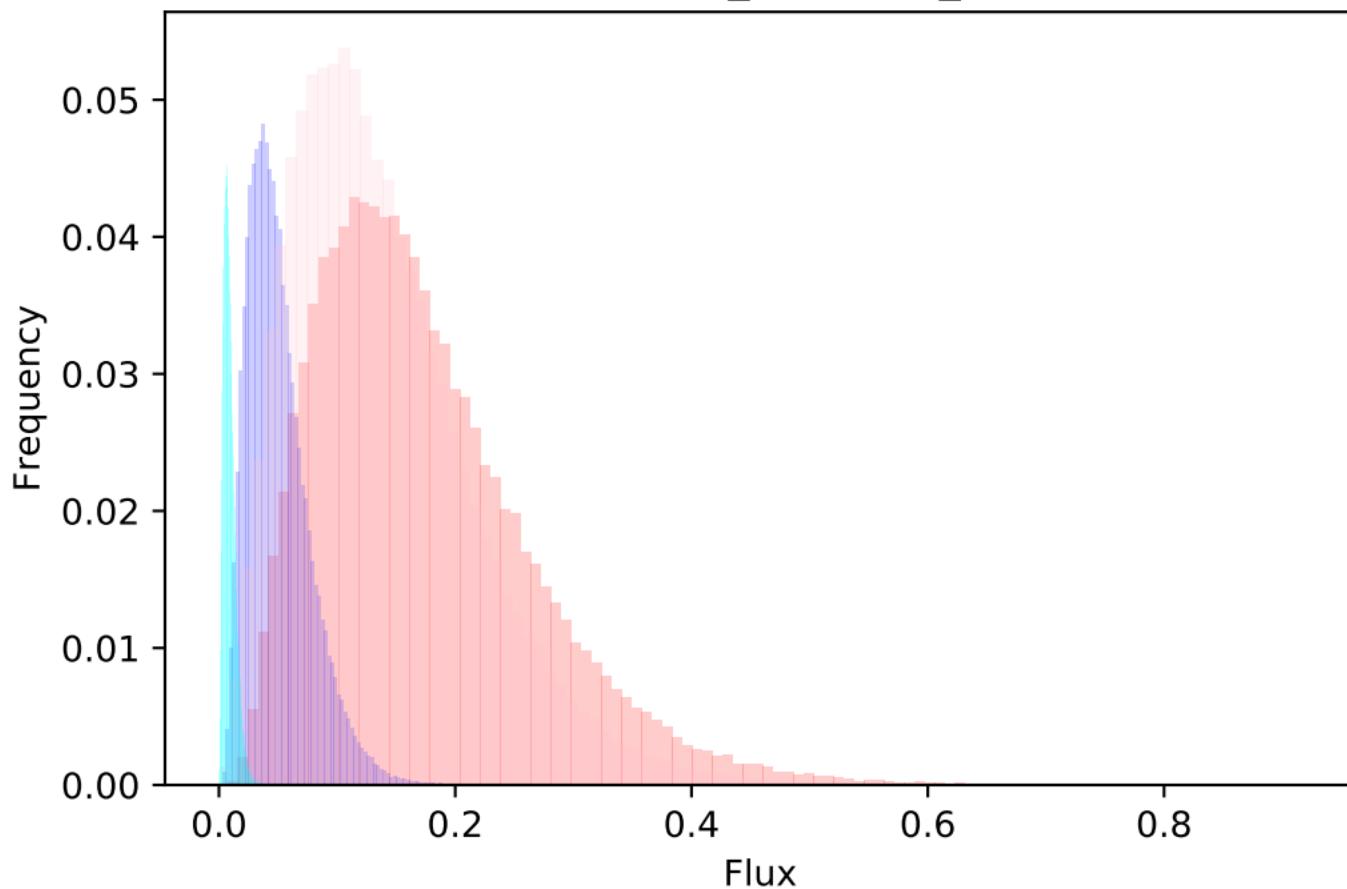
438 : Trp\_h --> Trp\_c



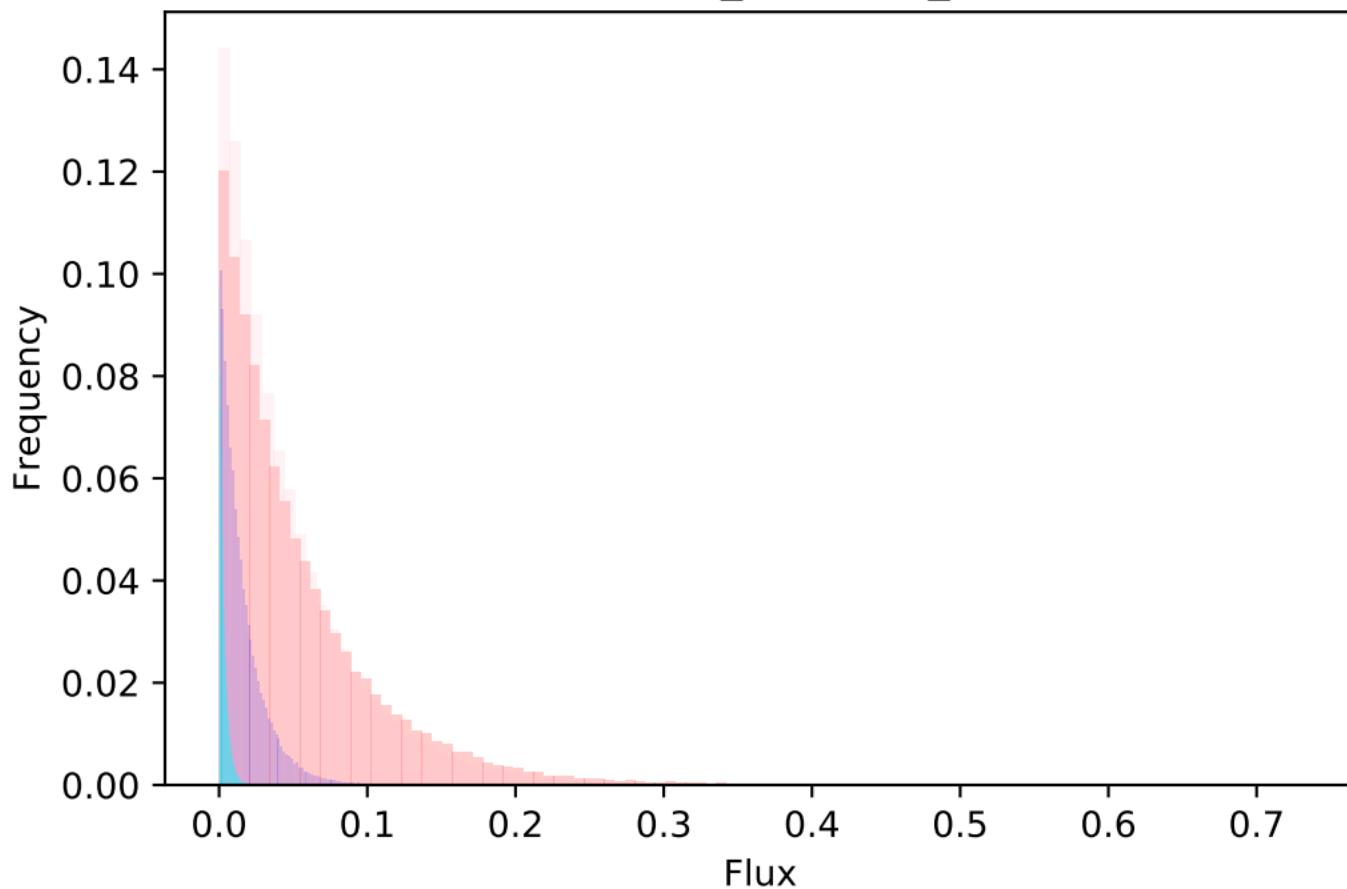
439 : Trp\_c --> Trp\_m



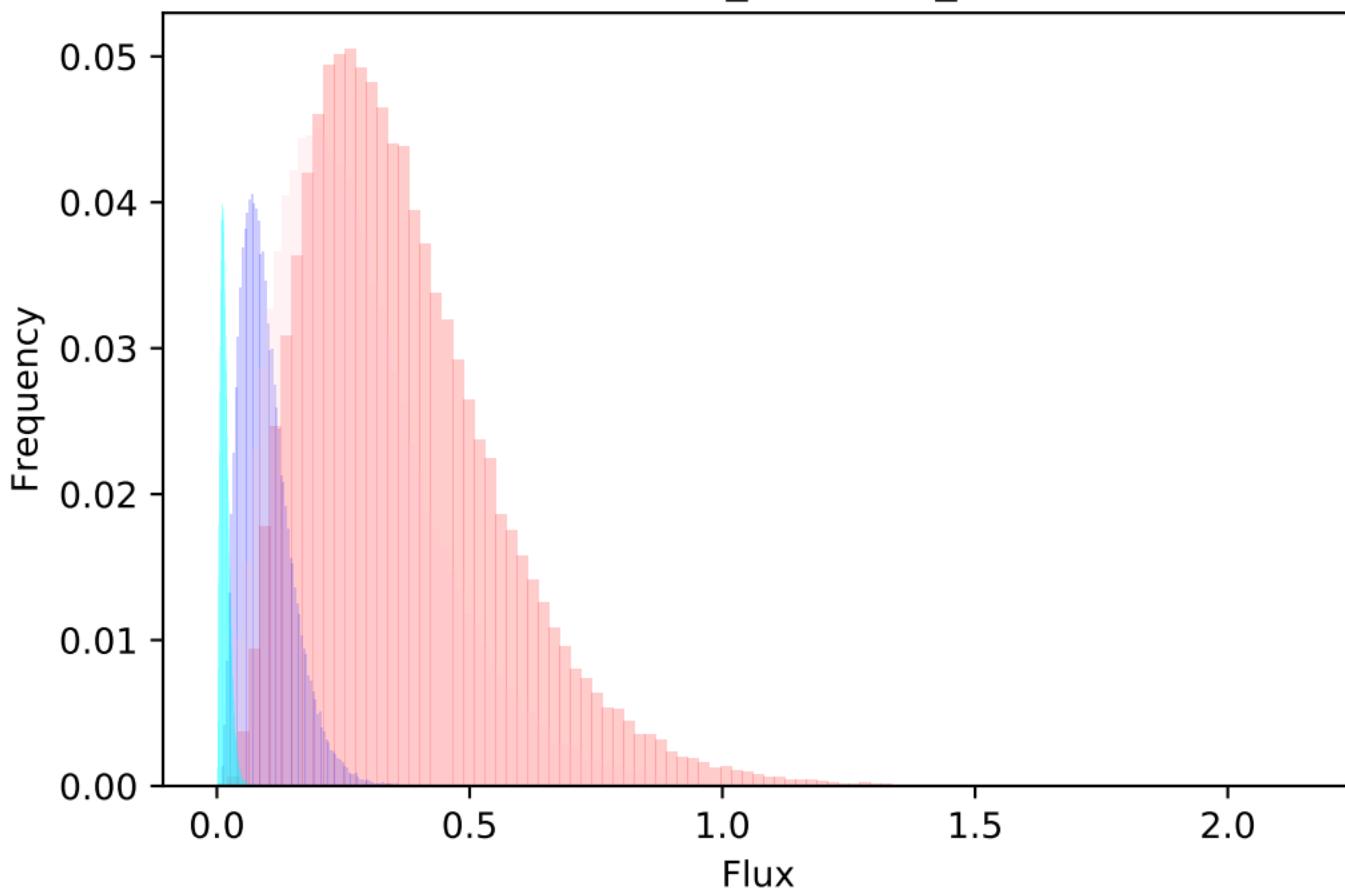
440 : Tyr\_h --> Tyr\_c



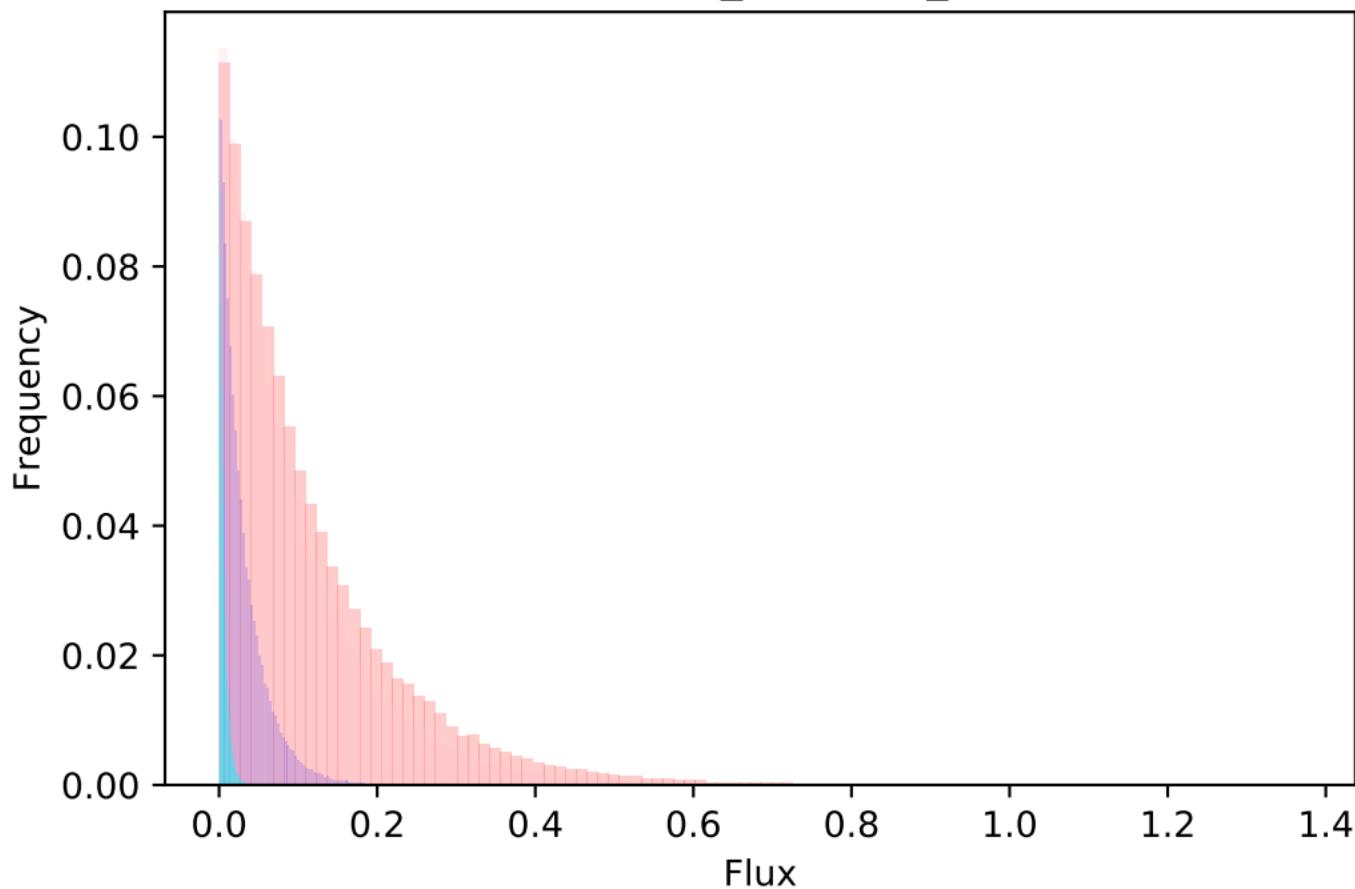
441 : Tyr\_c --> Tyr\_m



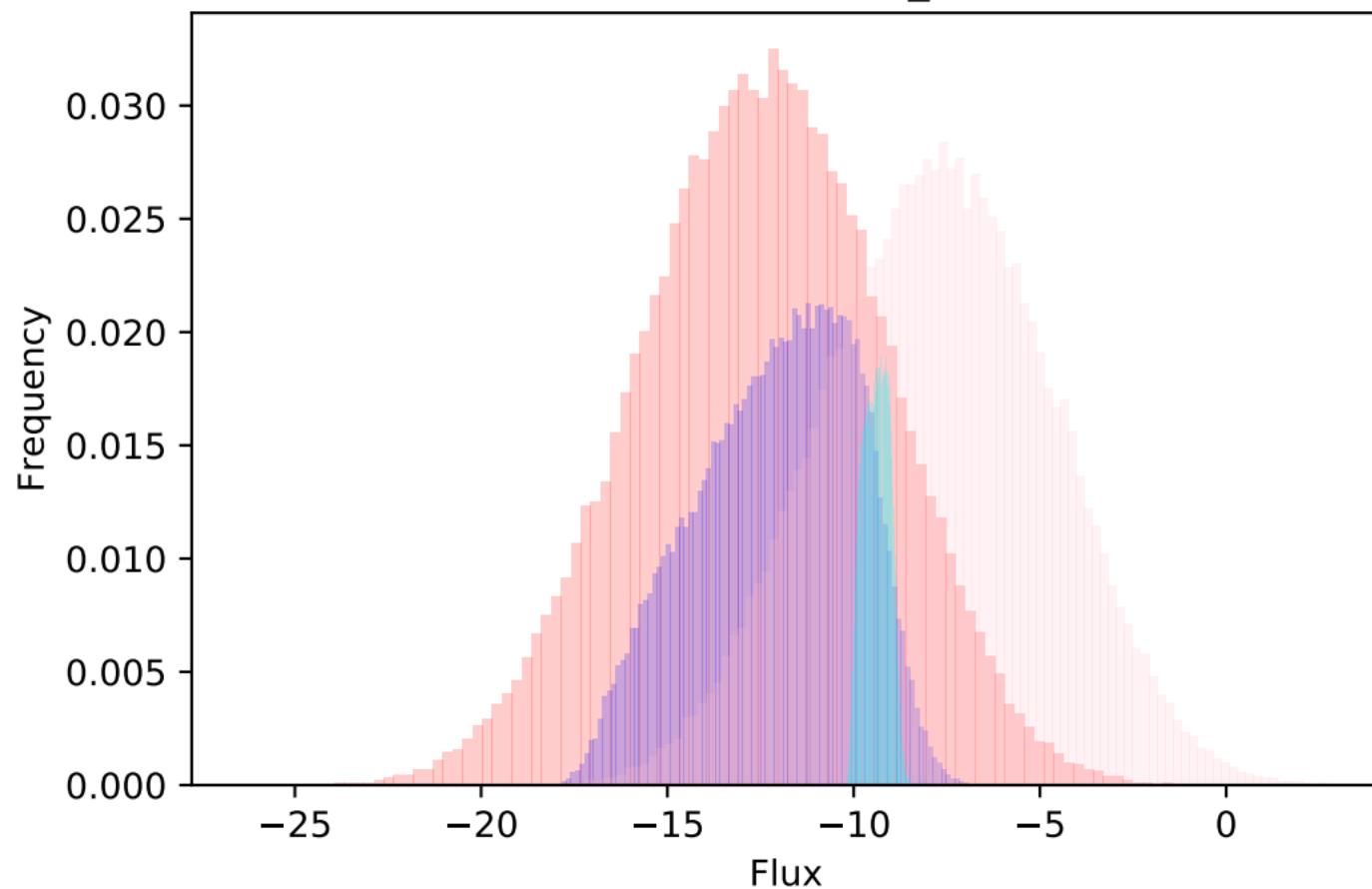
442 : Val\_h --> Val\_c



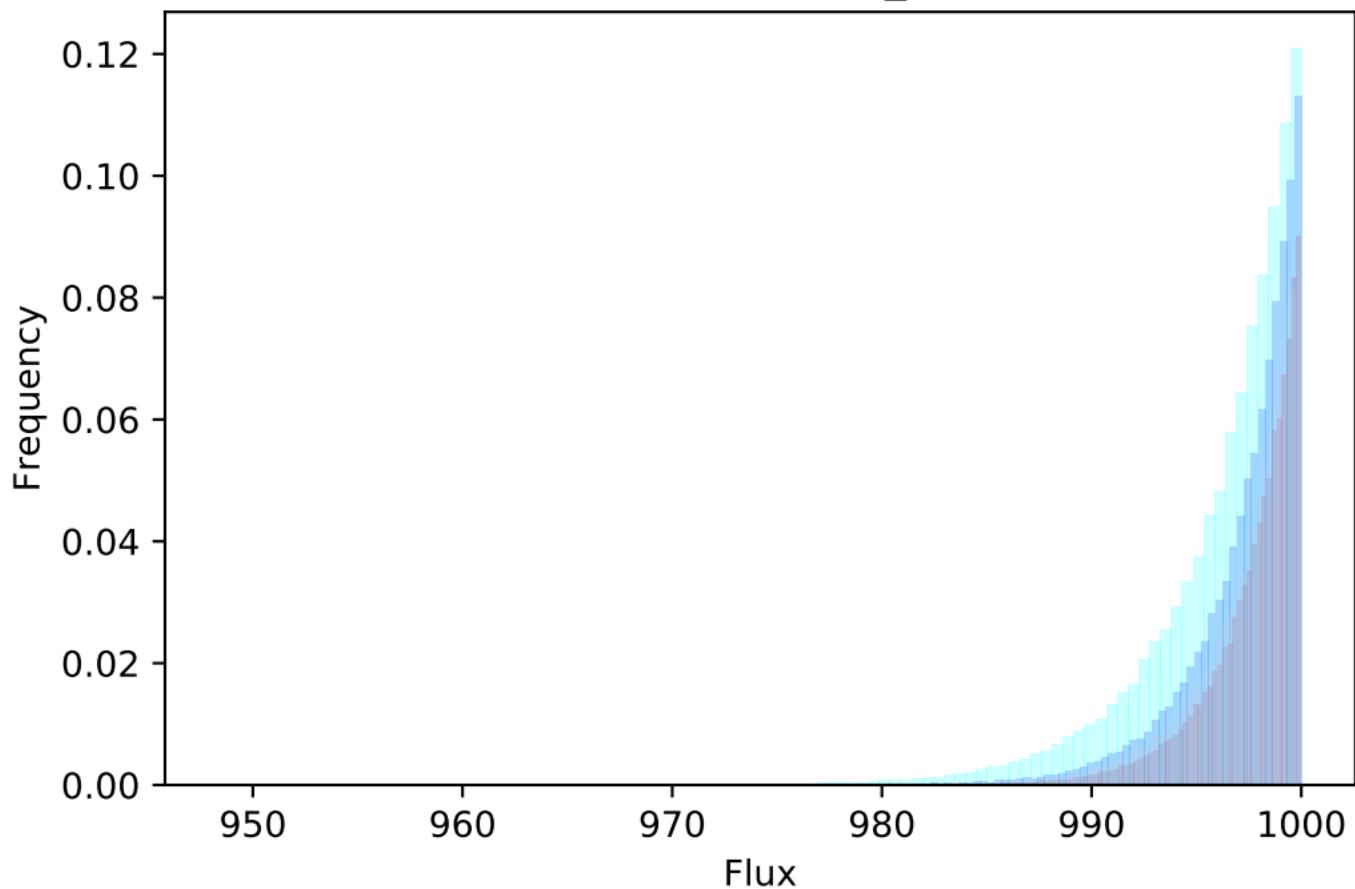
443 : Val\_c --> Val\_m



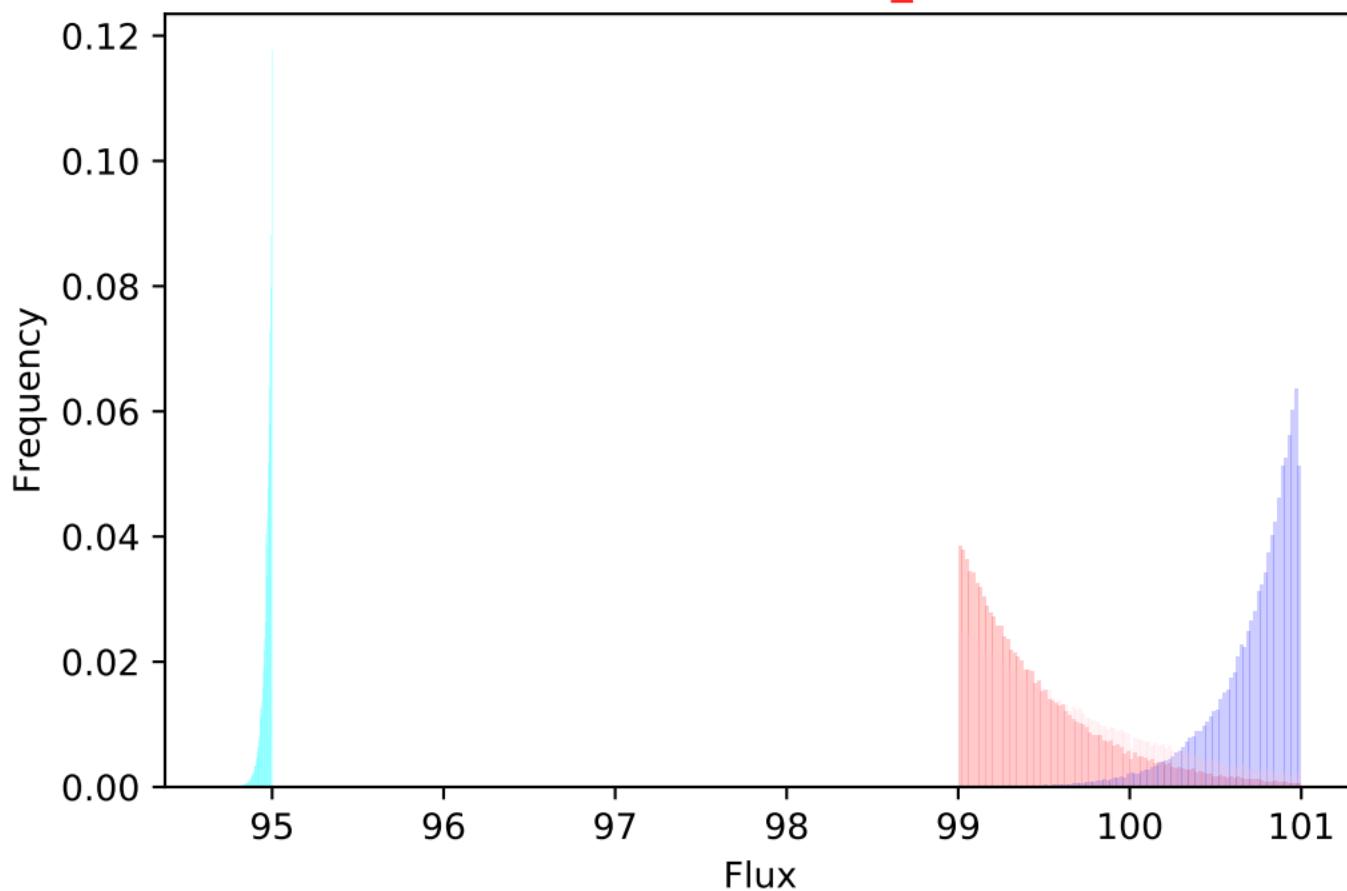
444 :  $<=>$  H\_c



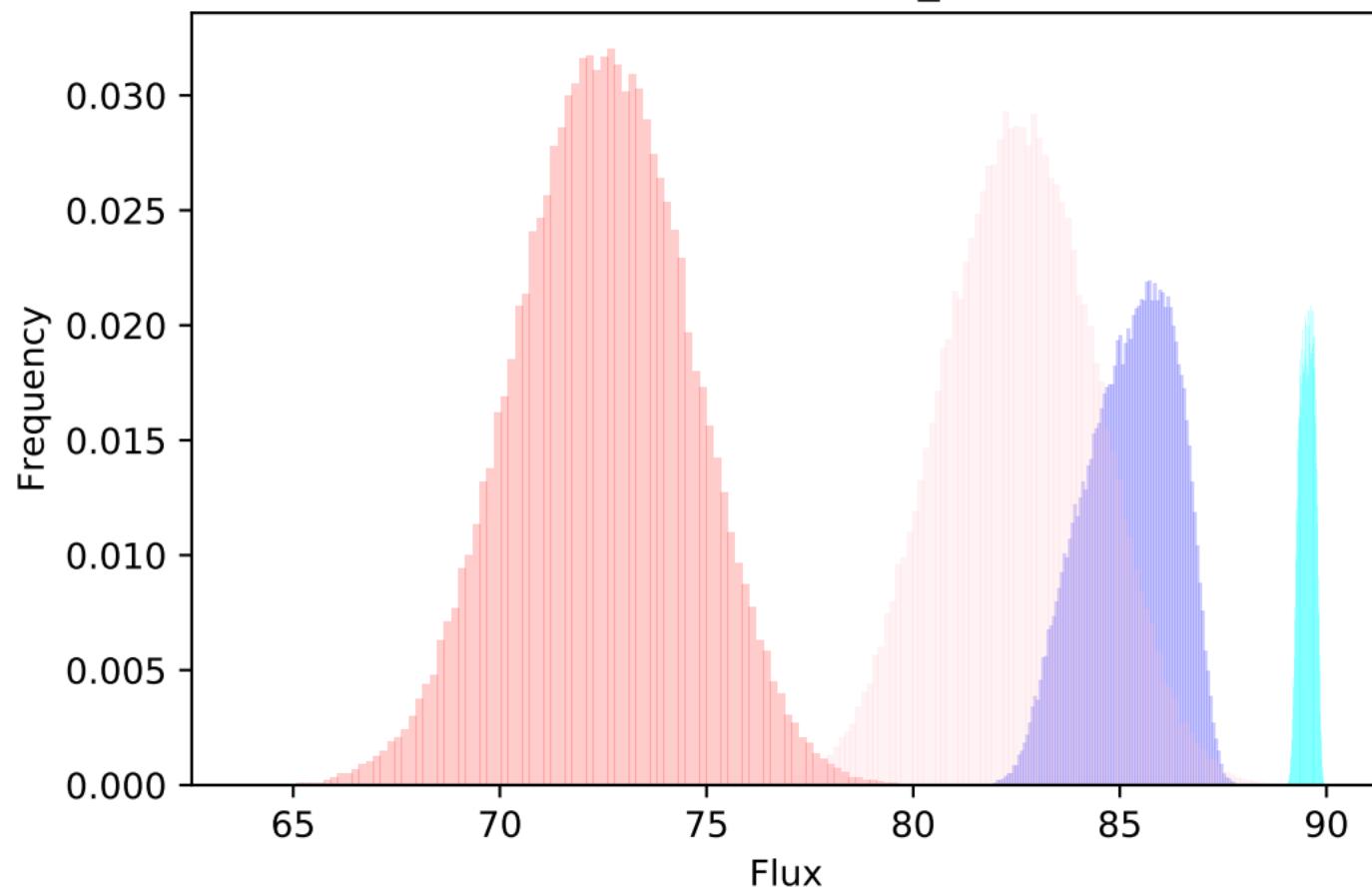
445 : --> hnu\_h

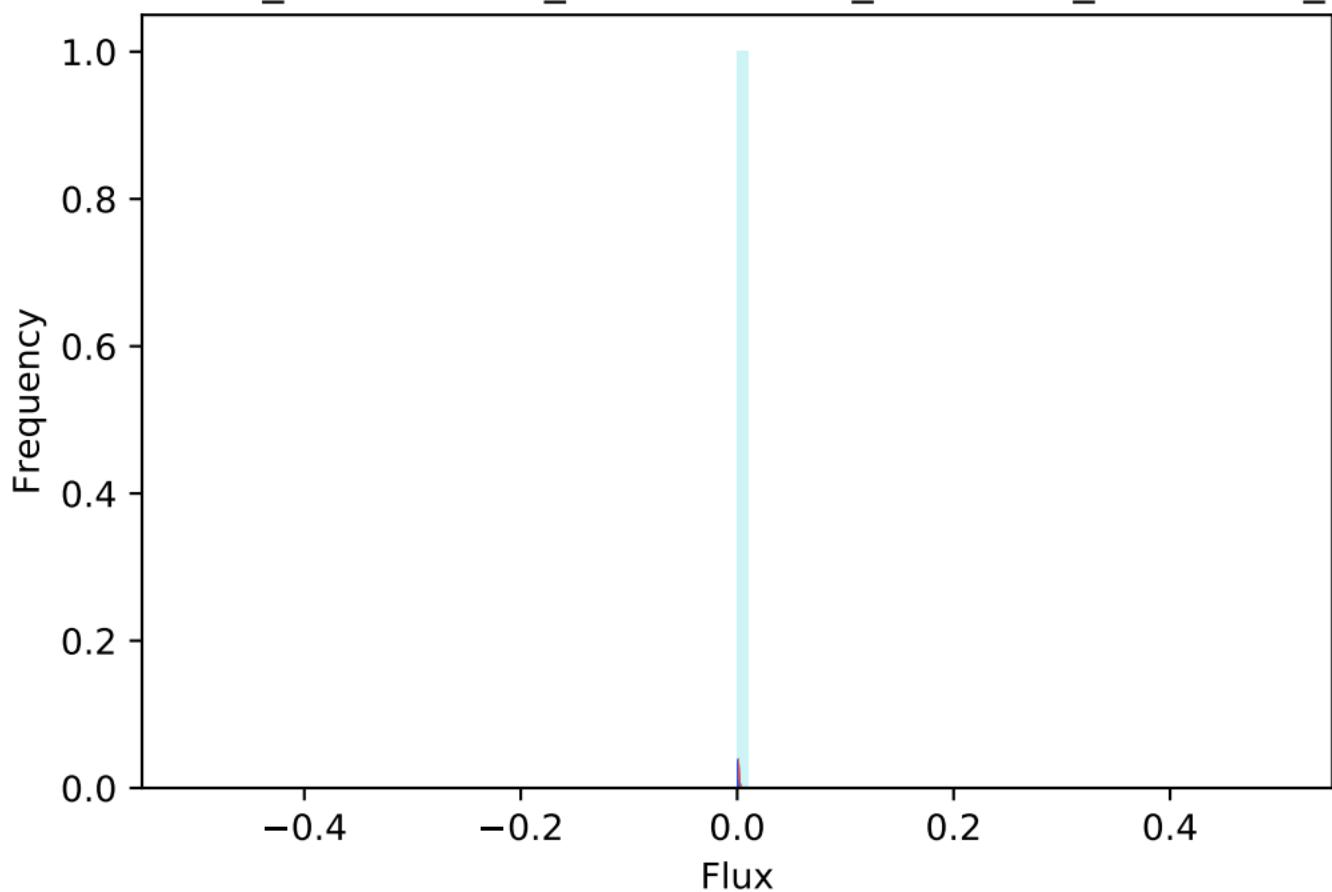


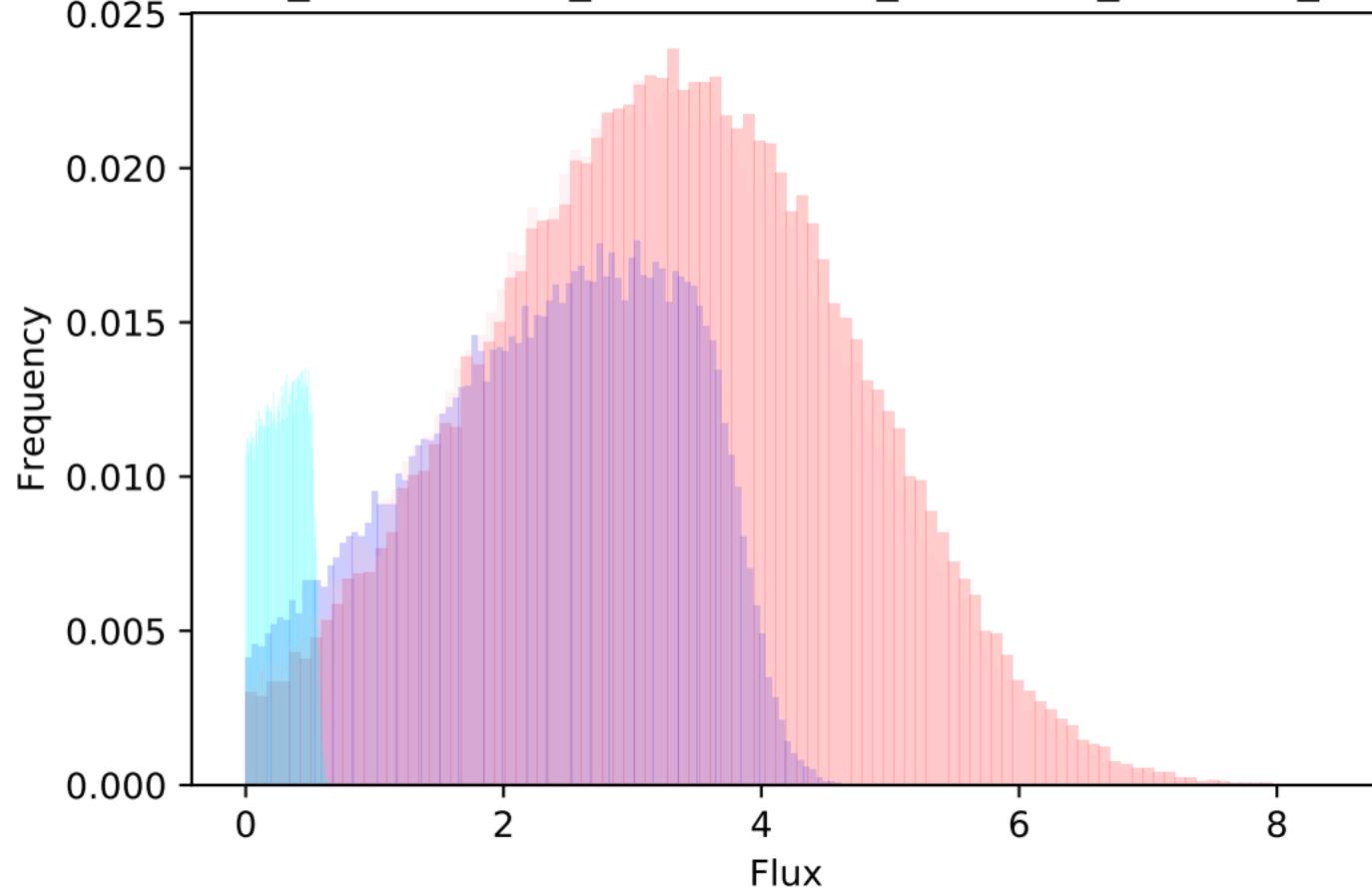
446 : --> CO2\_c



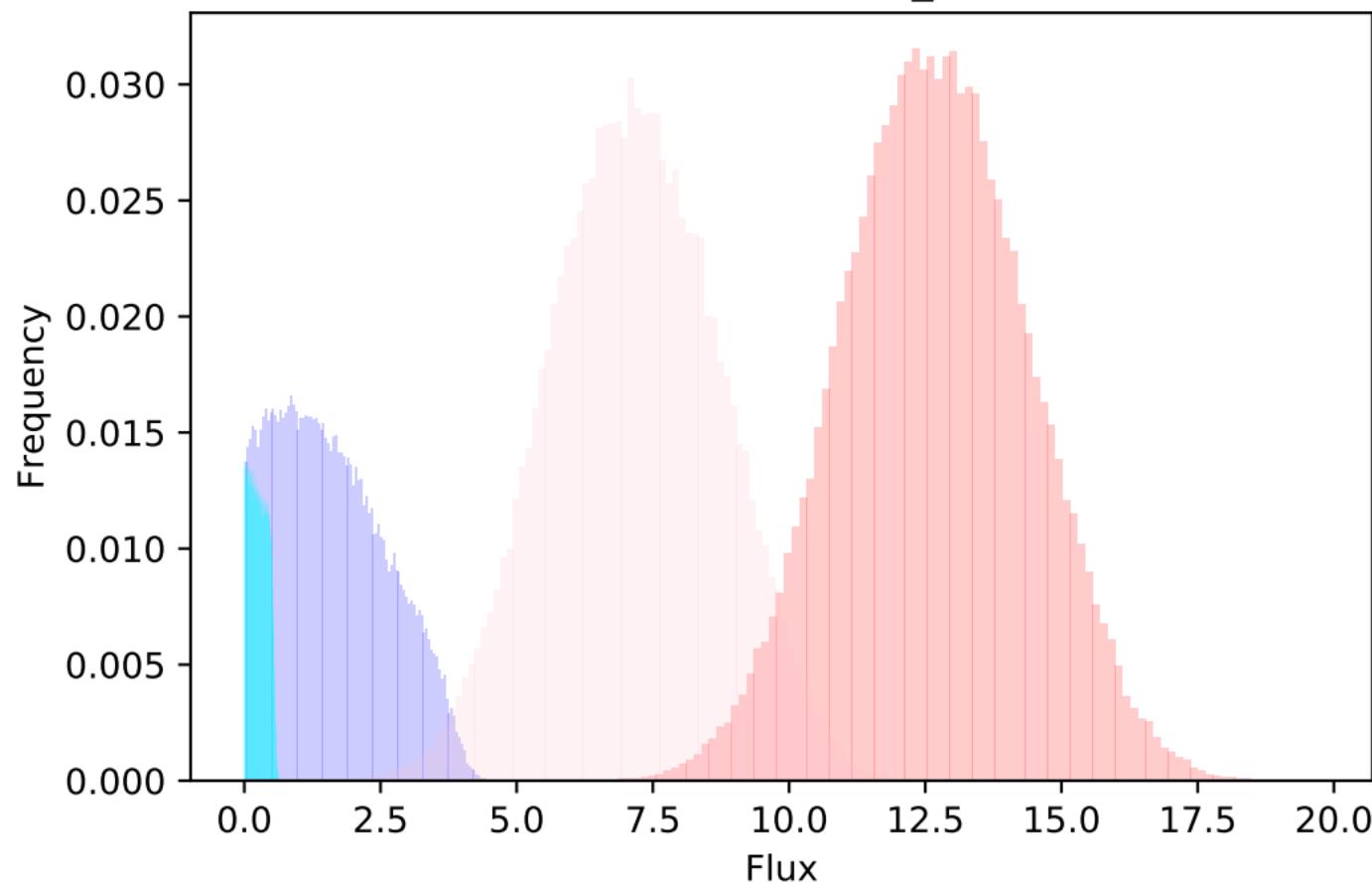
447 : --> H2O\_c

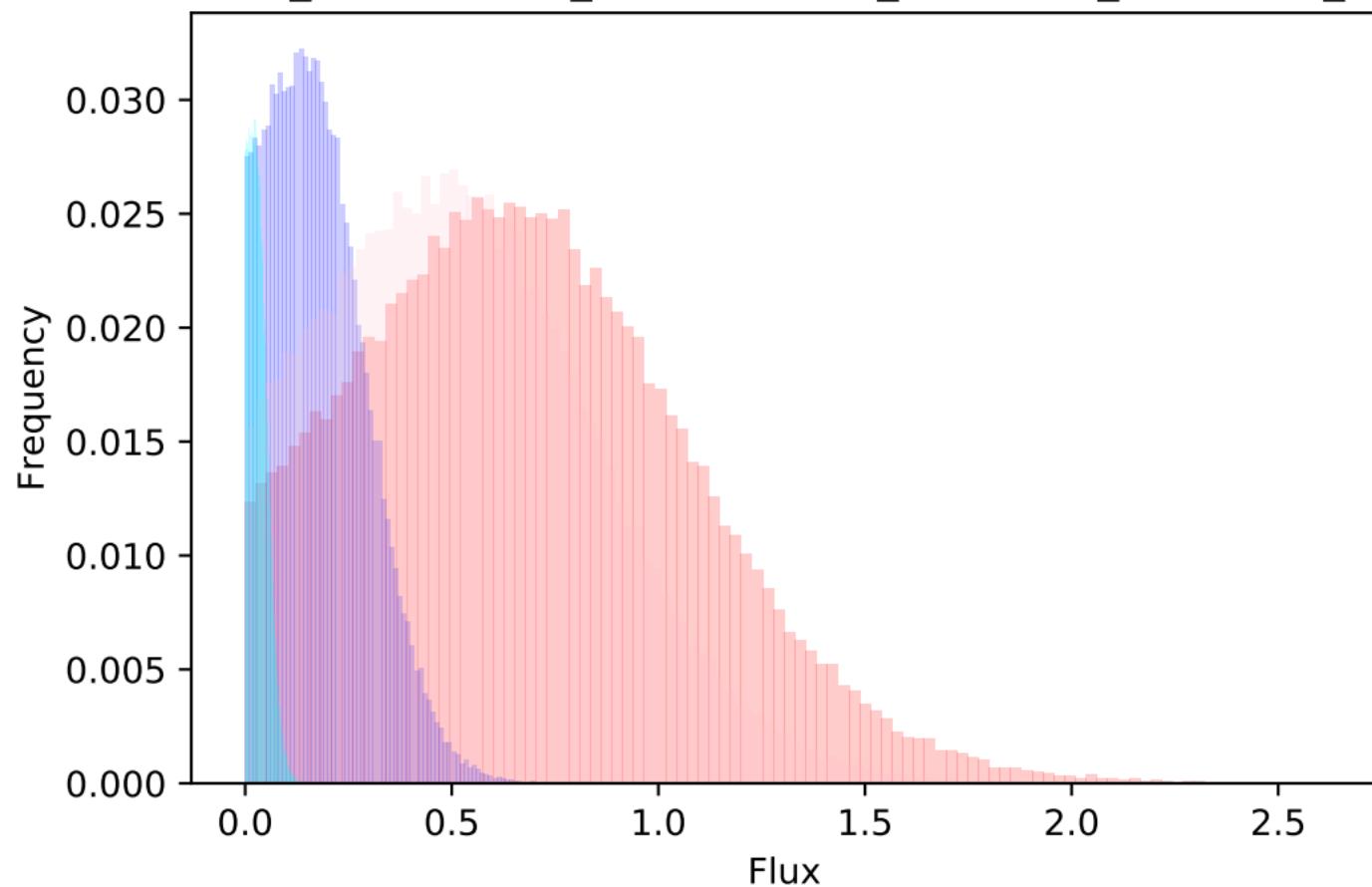




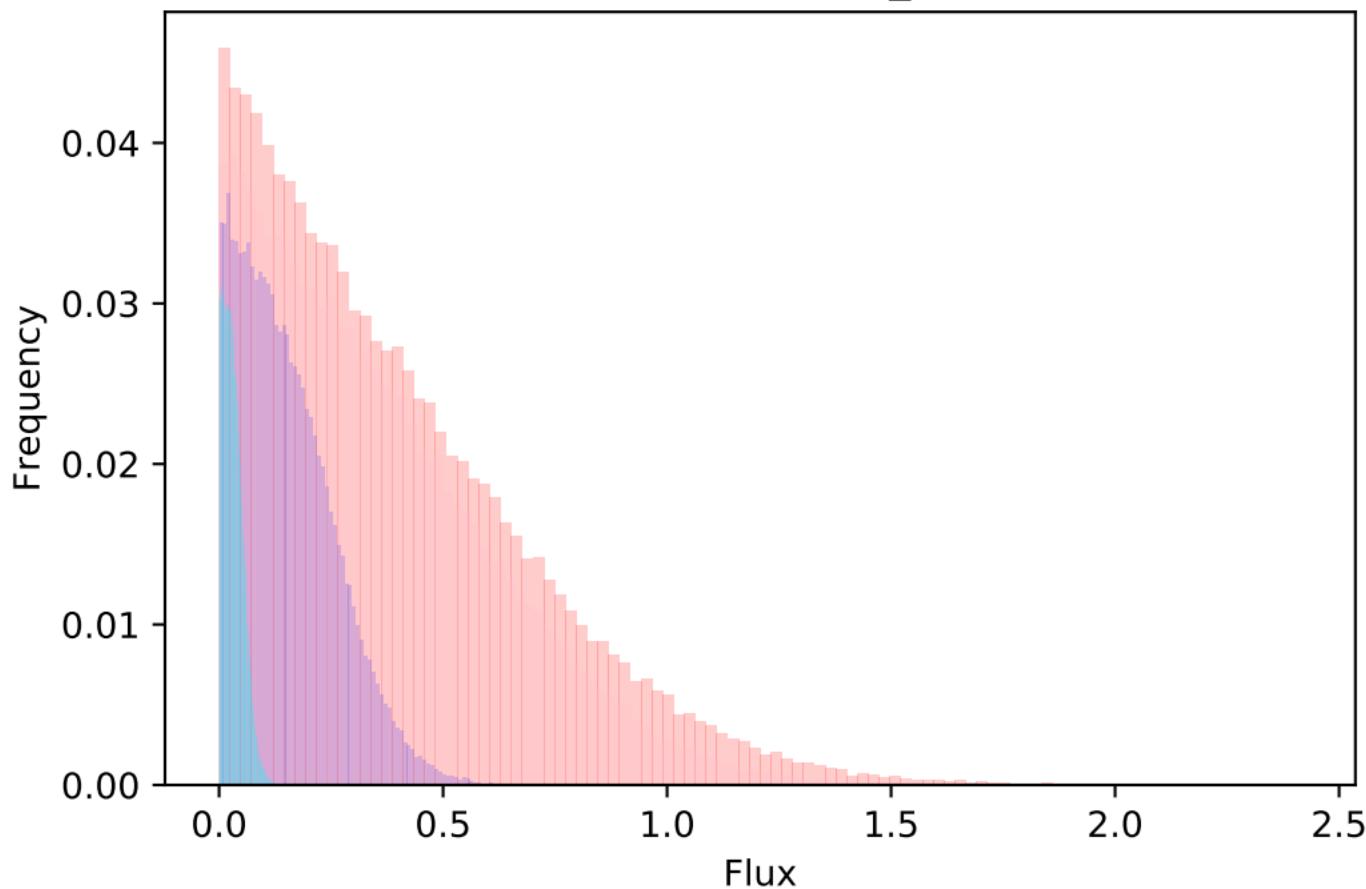


450 : --> NH4\_c

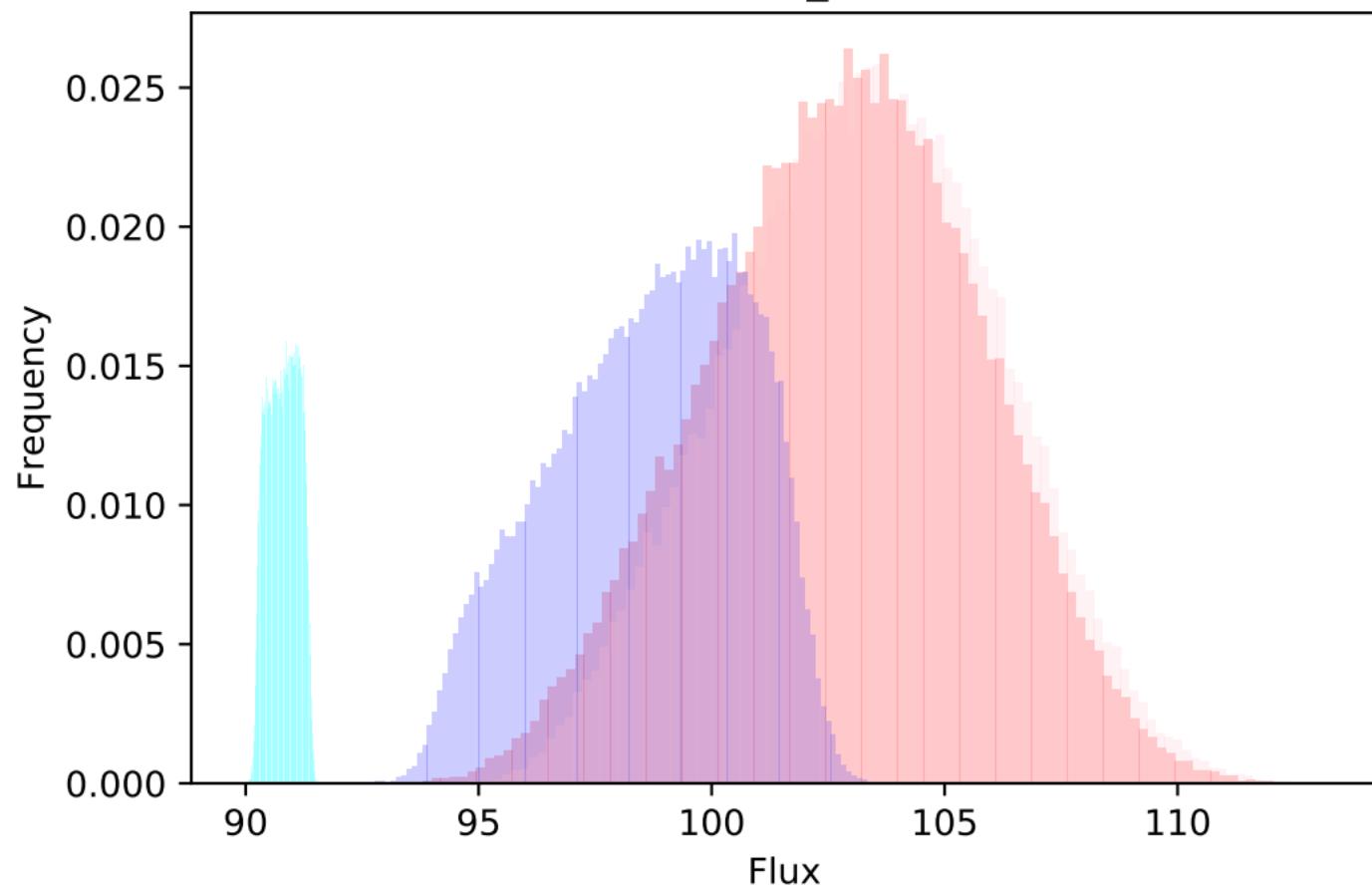




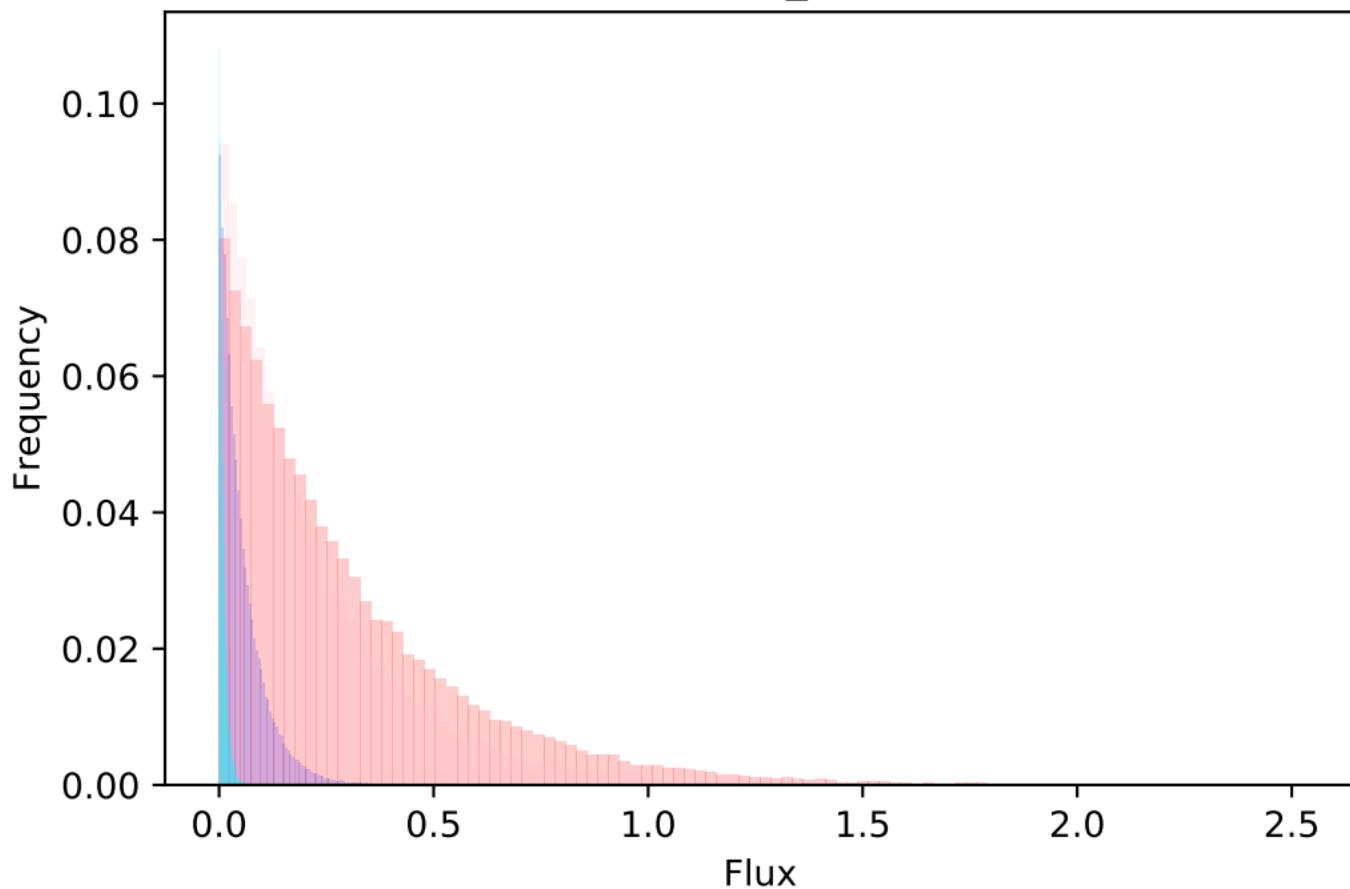
452 : --> H2S\_c



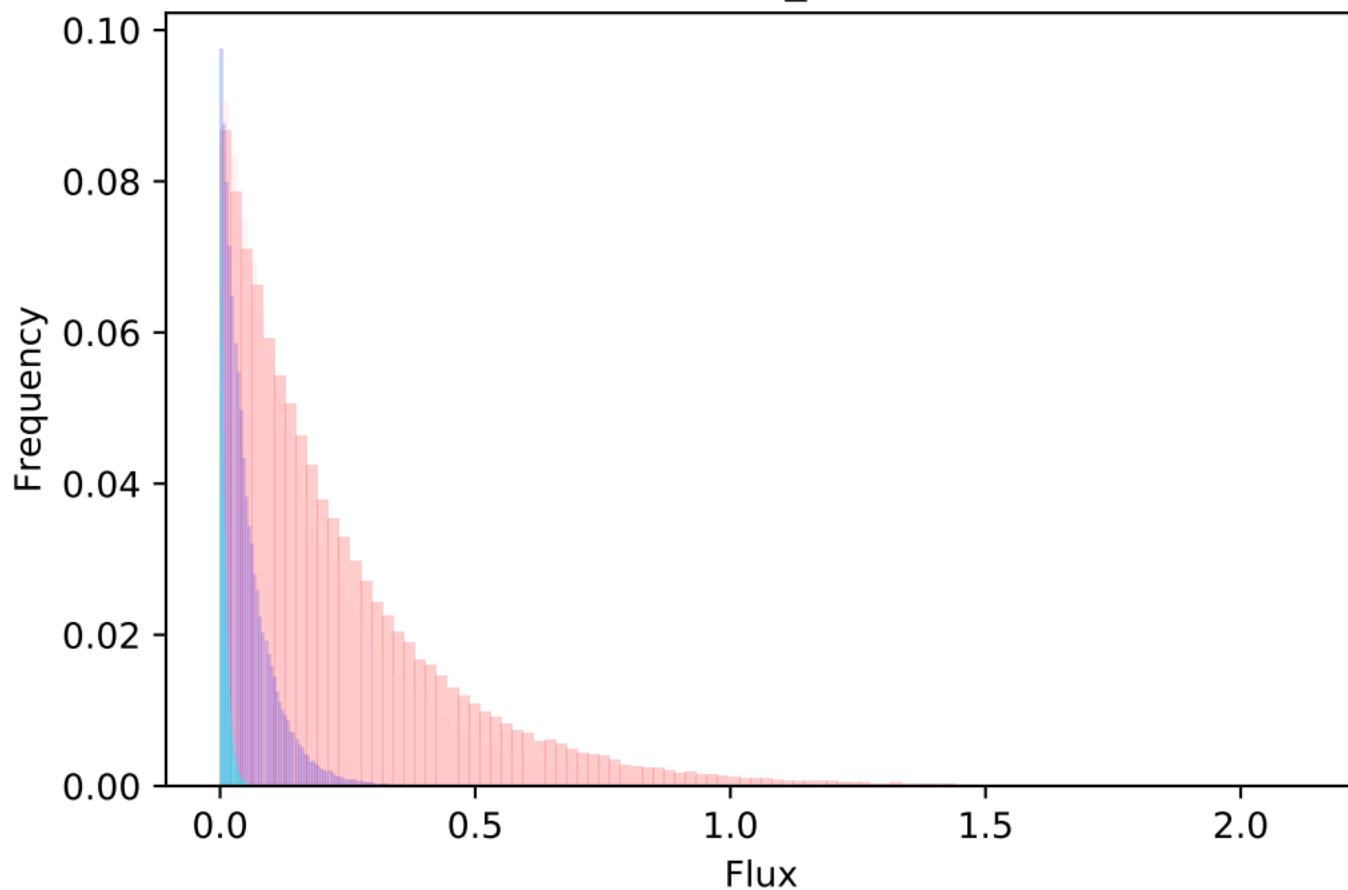
453 : O2\_c -->



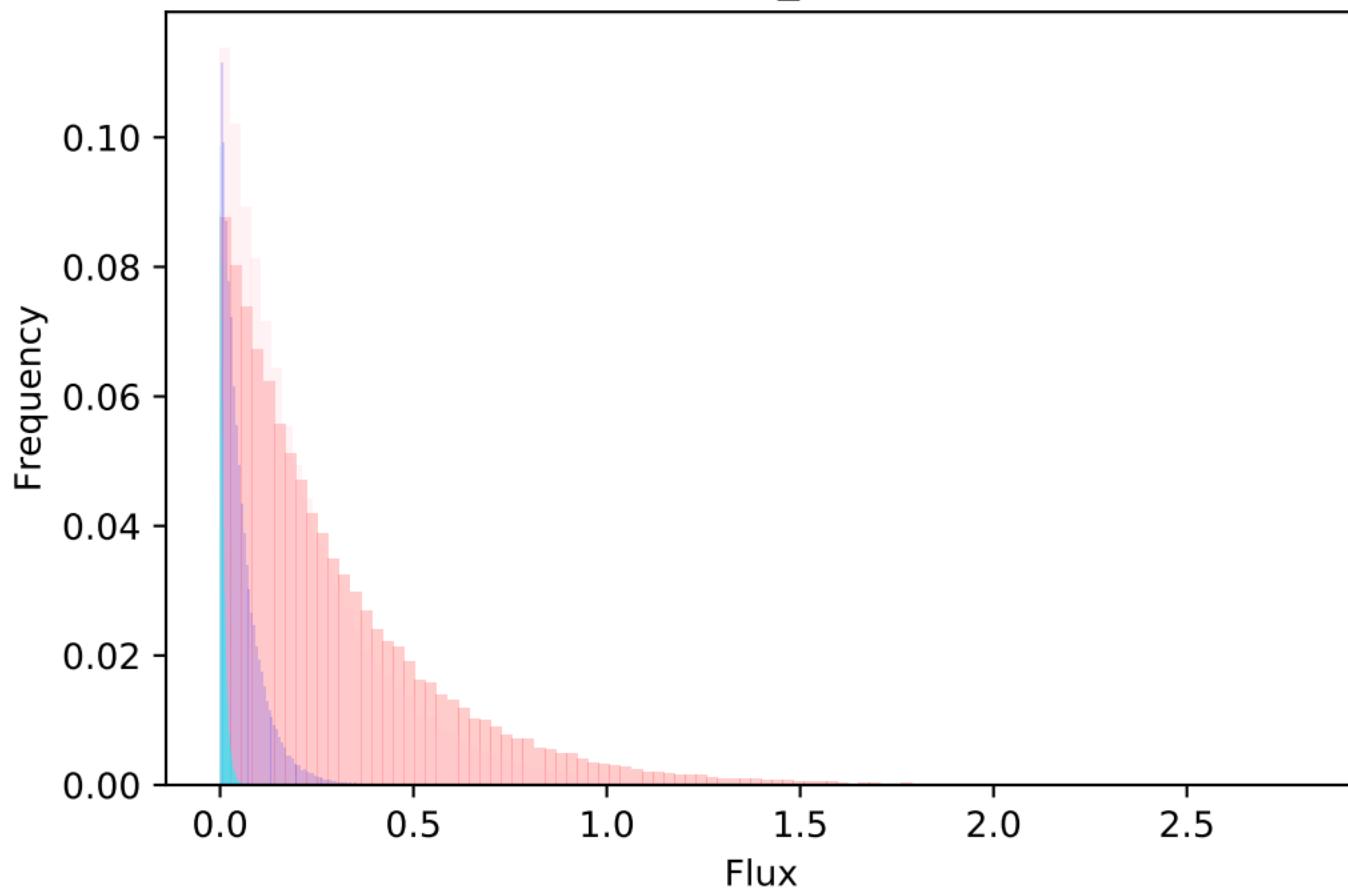
454 : Ala\_c -->



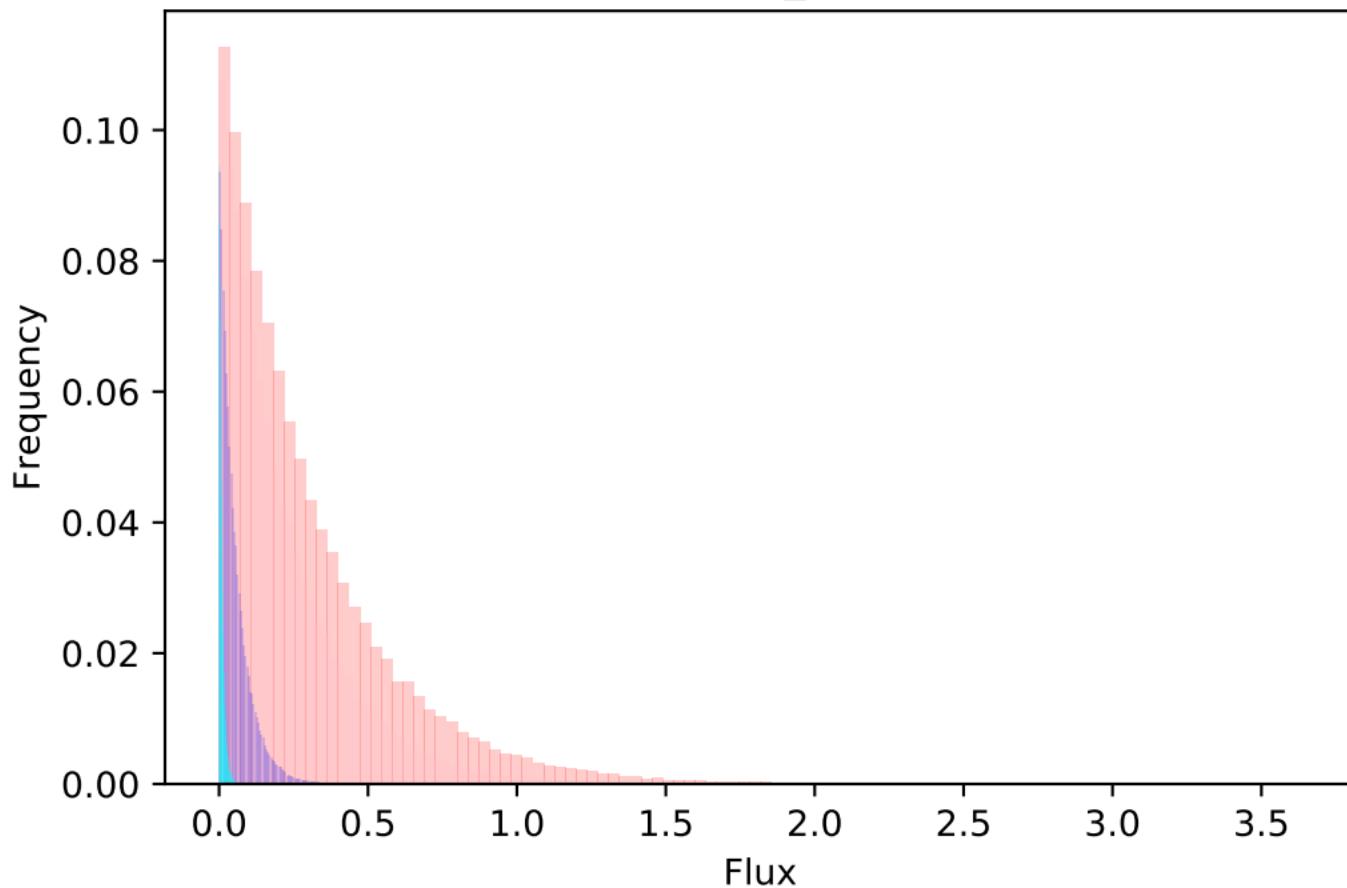
455 : Ala\_h -->



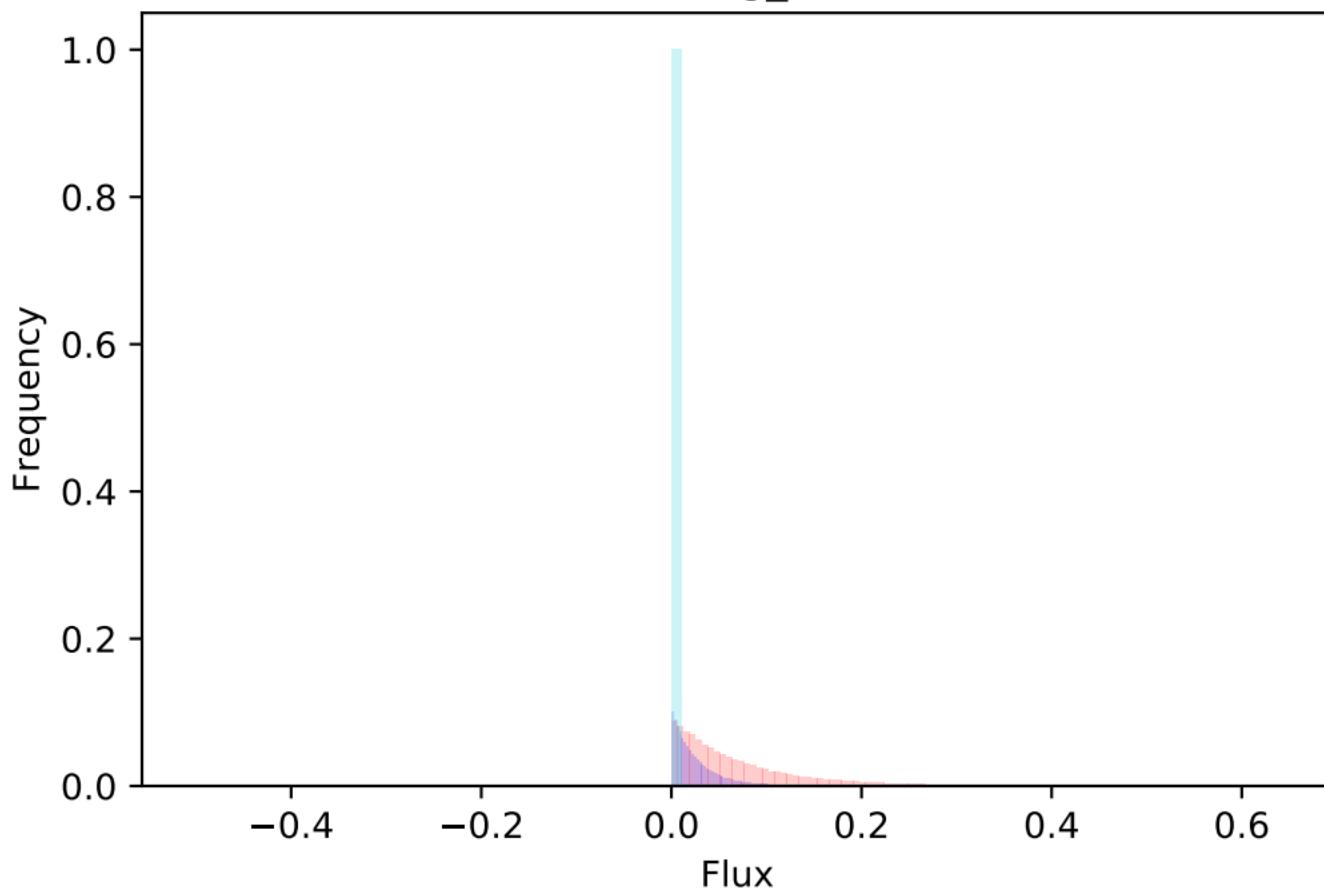
456 : Ala\_m -->



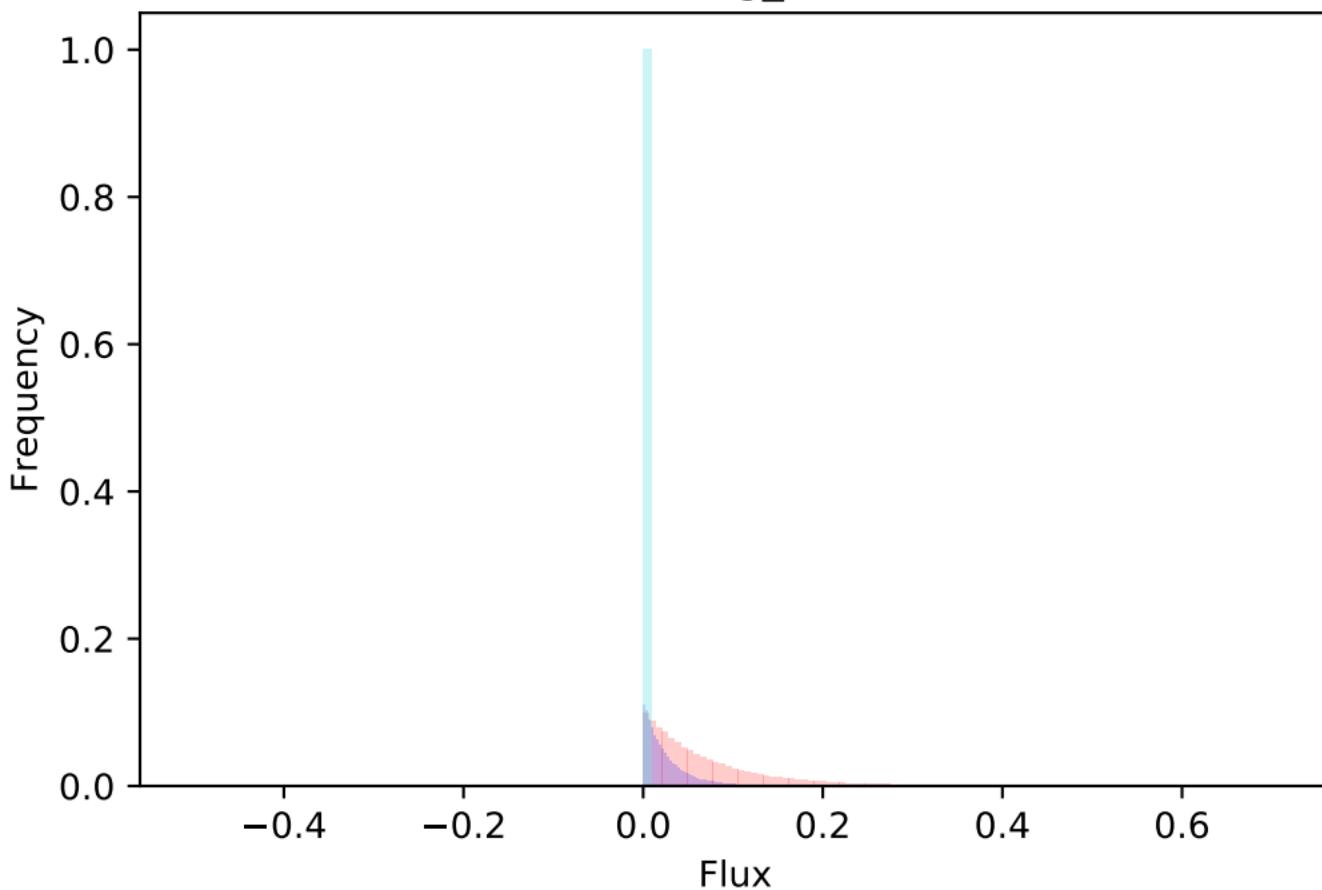
457 : Ala\_p -->



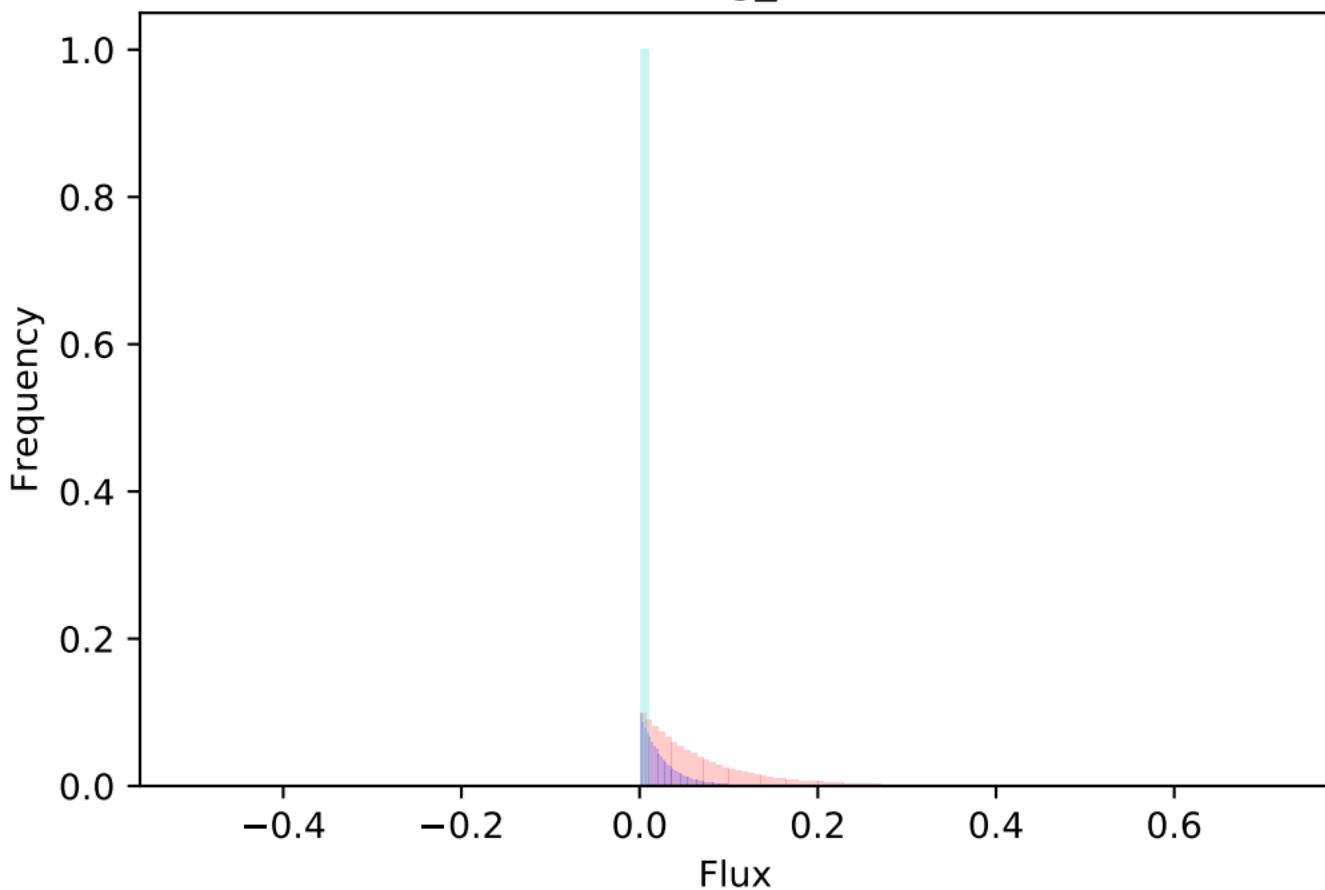
458 : Arg\_c -->



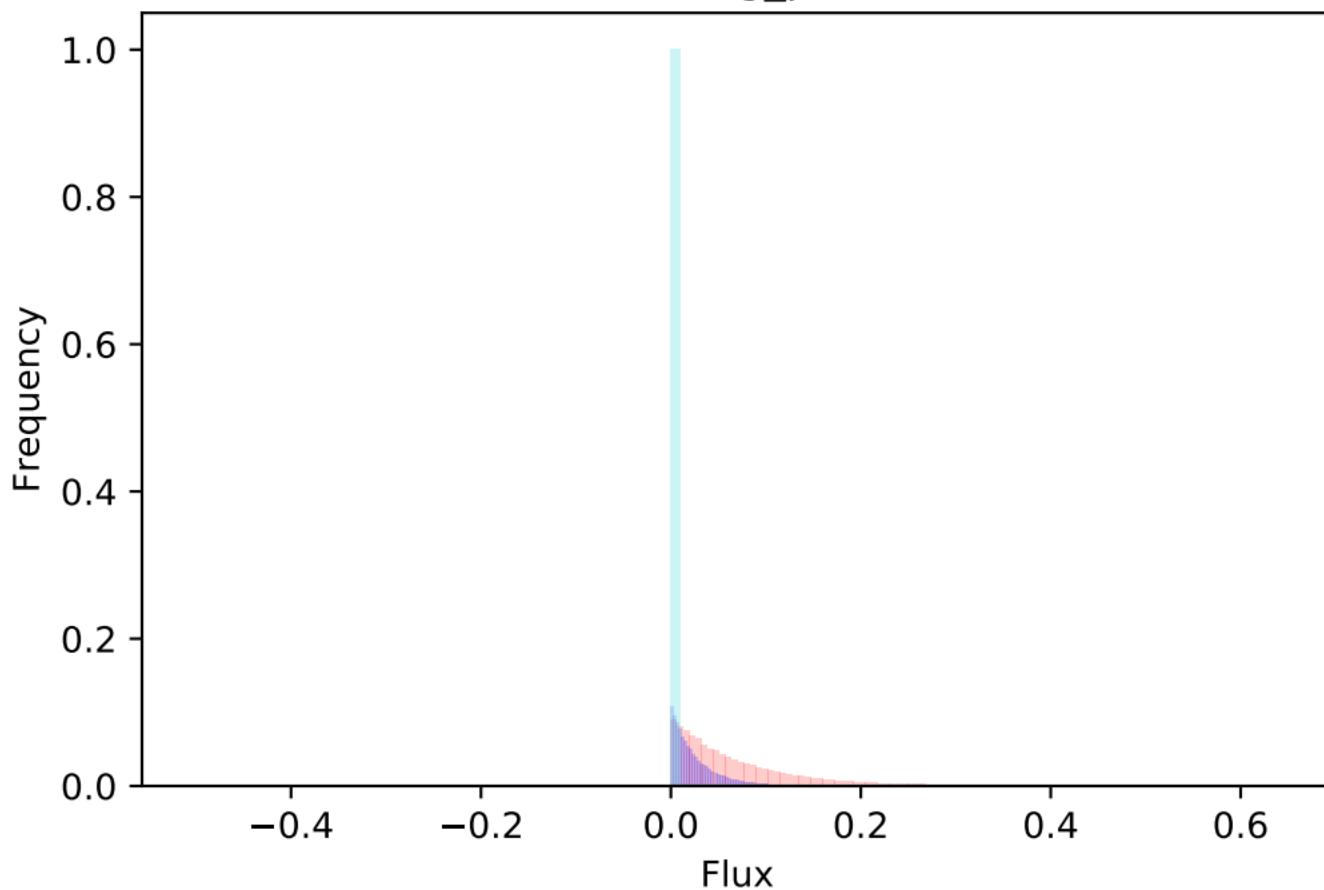
459 : Arg\_h -->



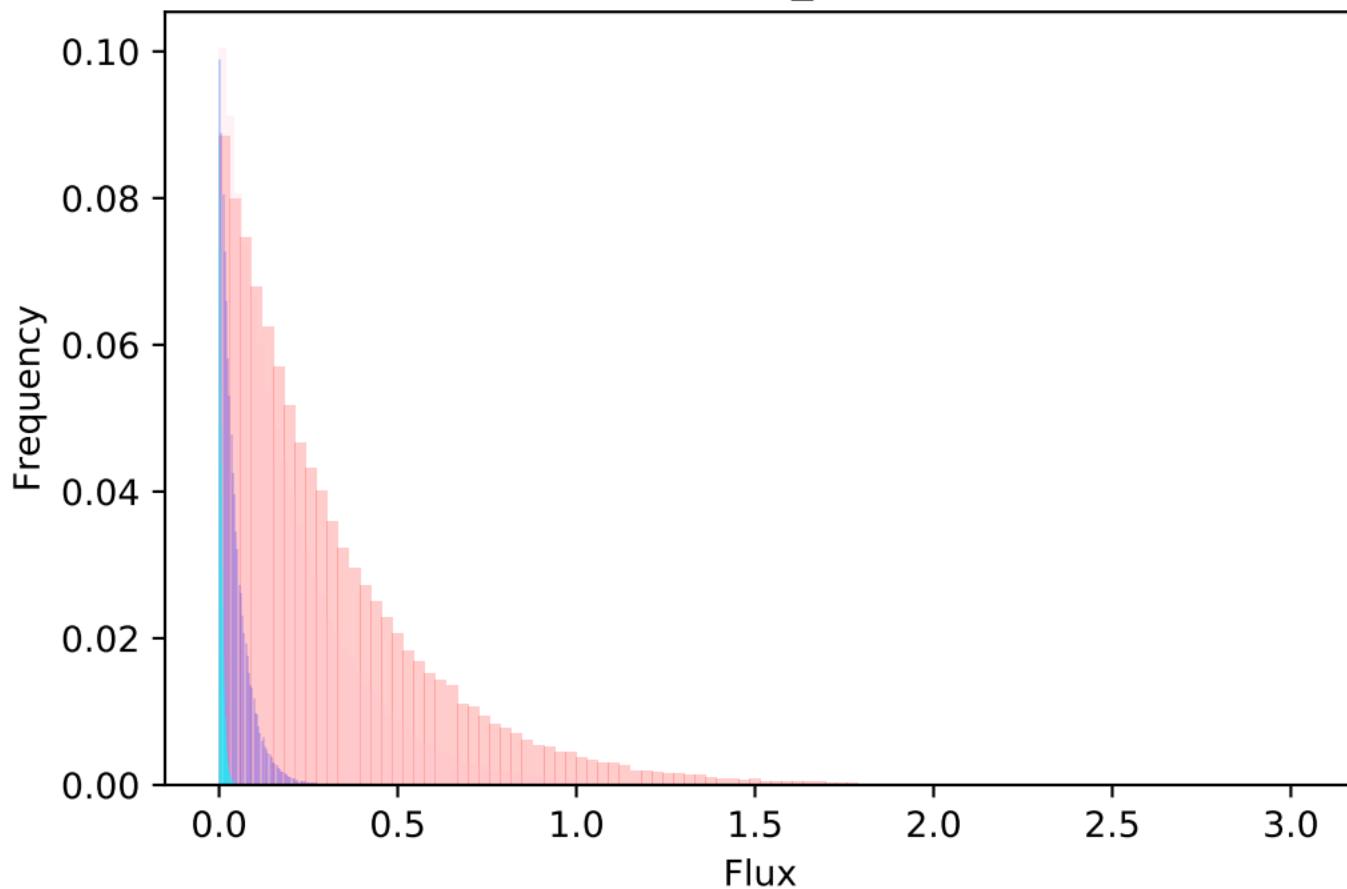
460 : Arg\_m -->



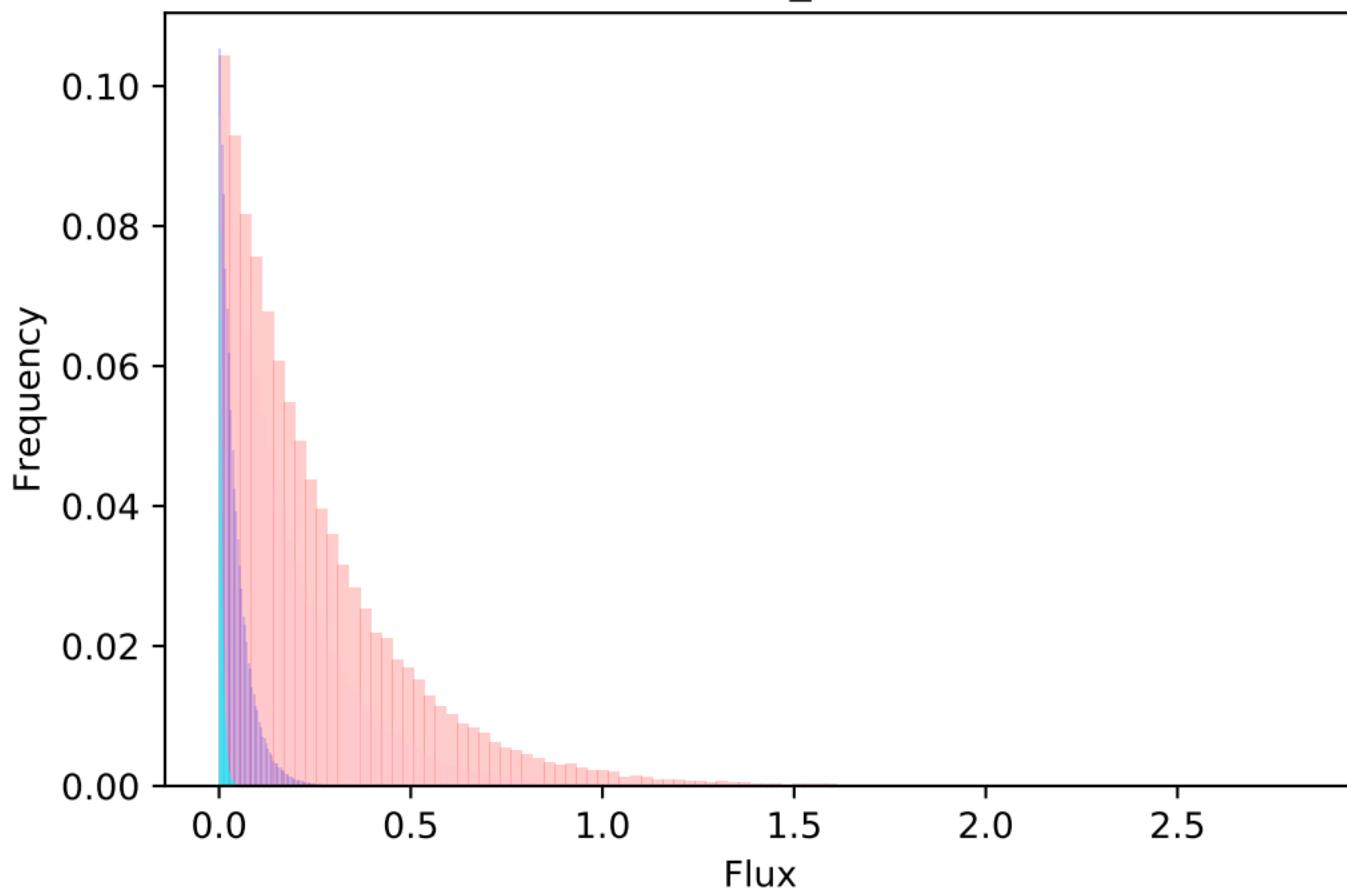
461 : Arg\_p -->



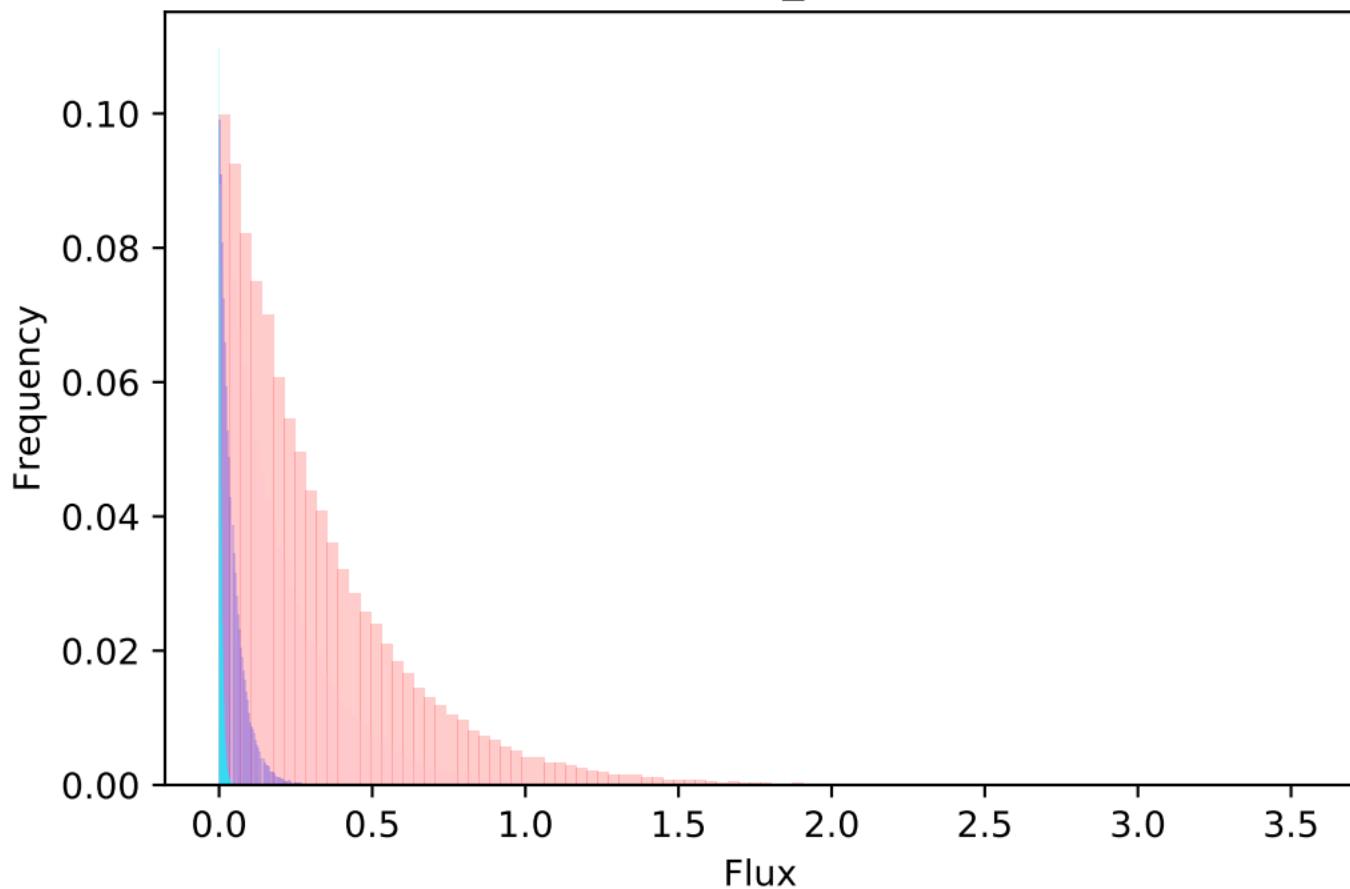
462 : Asn\_c -->



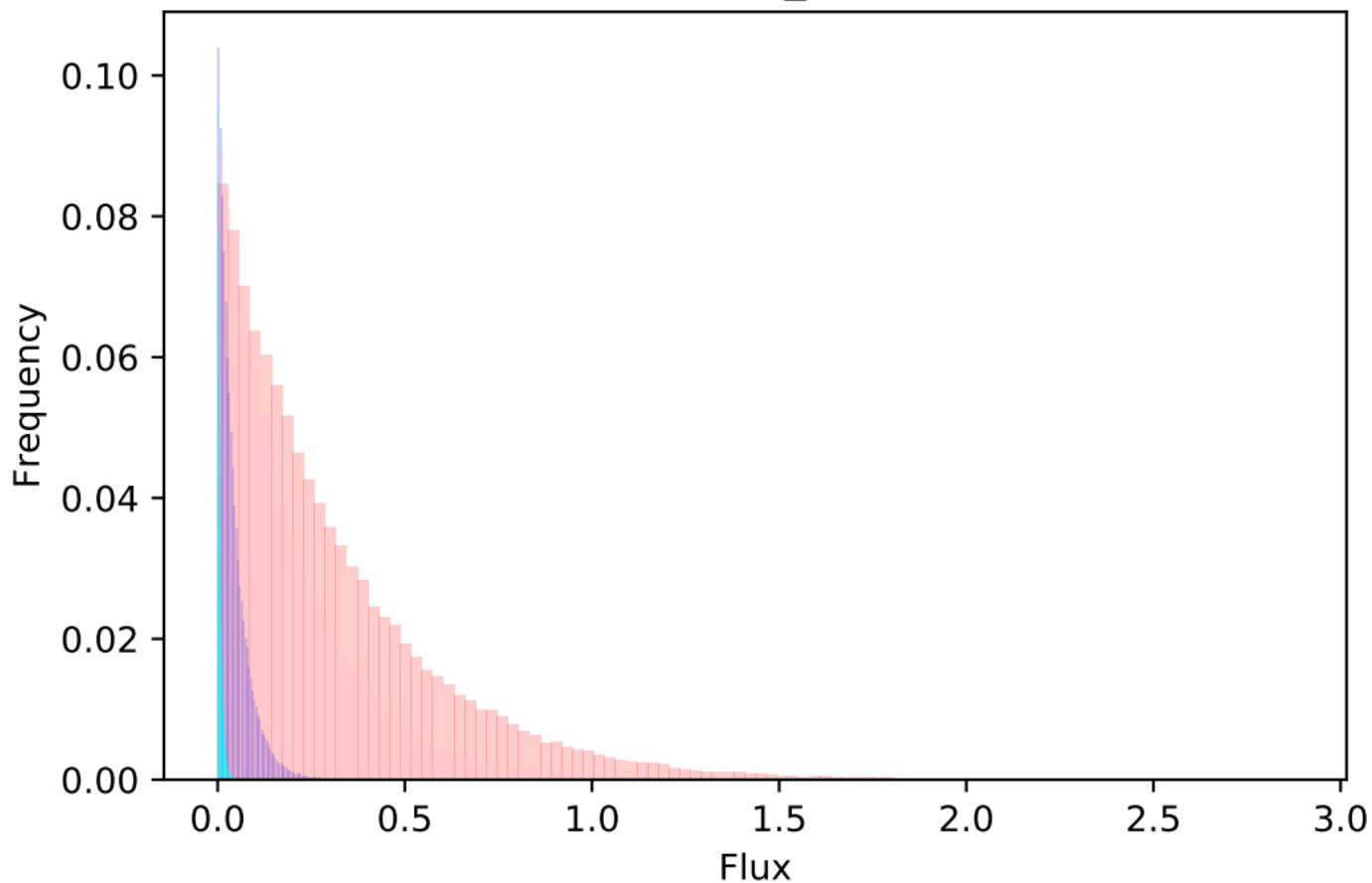
463 : Asn\_h -->



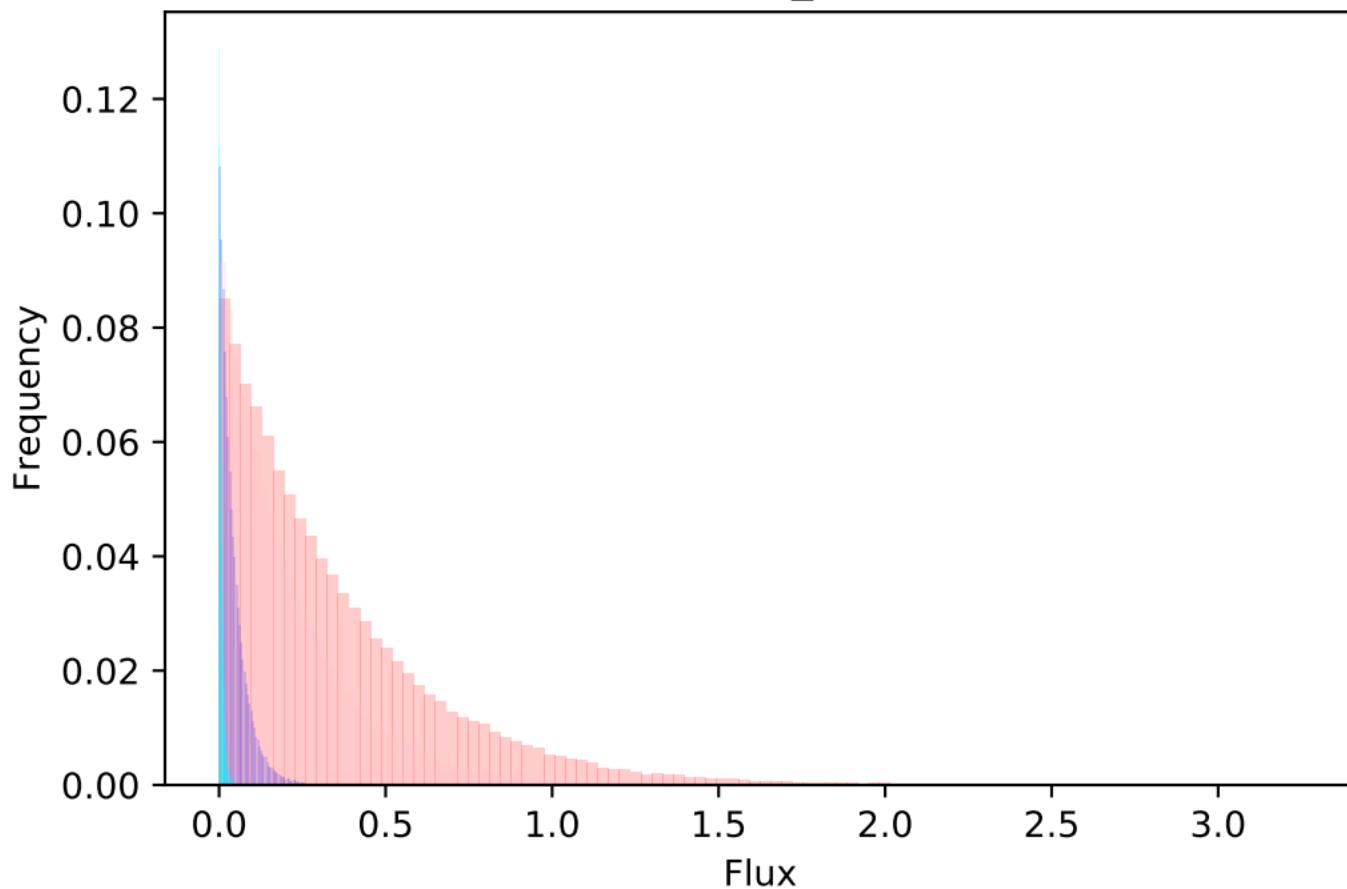
464 : Asn\_m -->



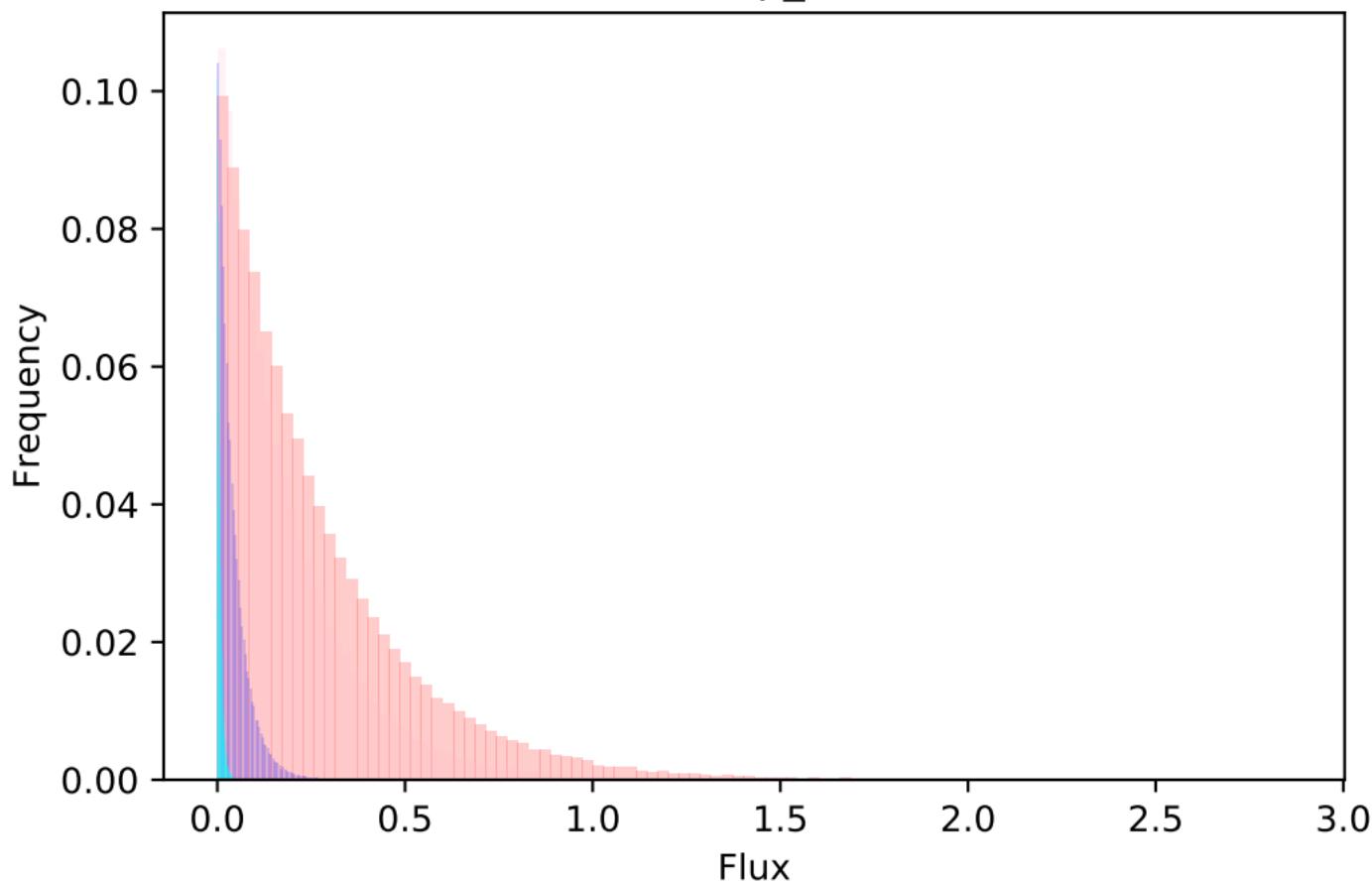
465 : Asn\_p -->



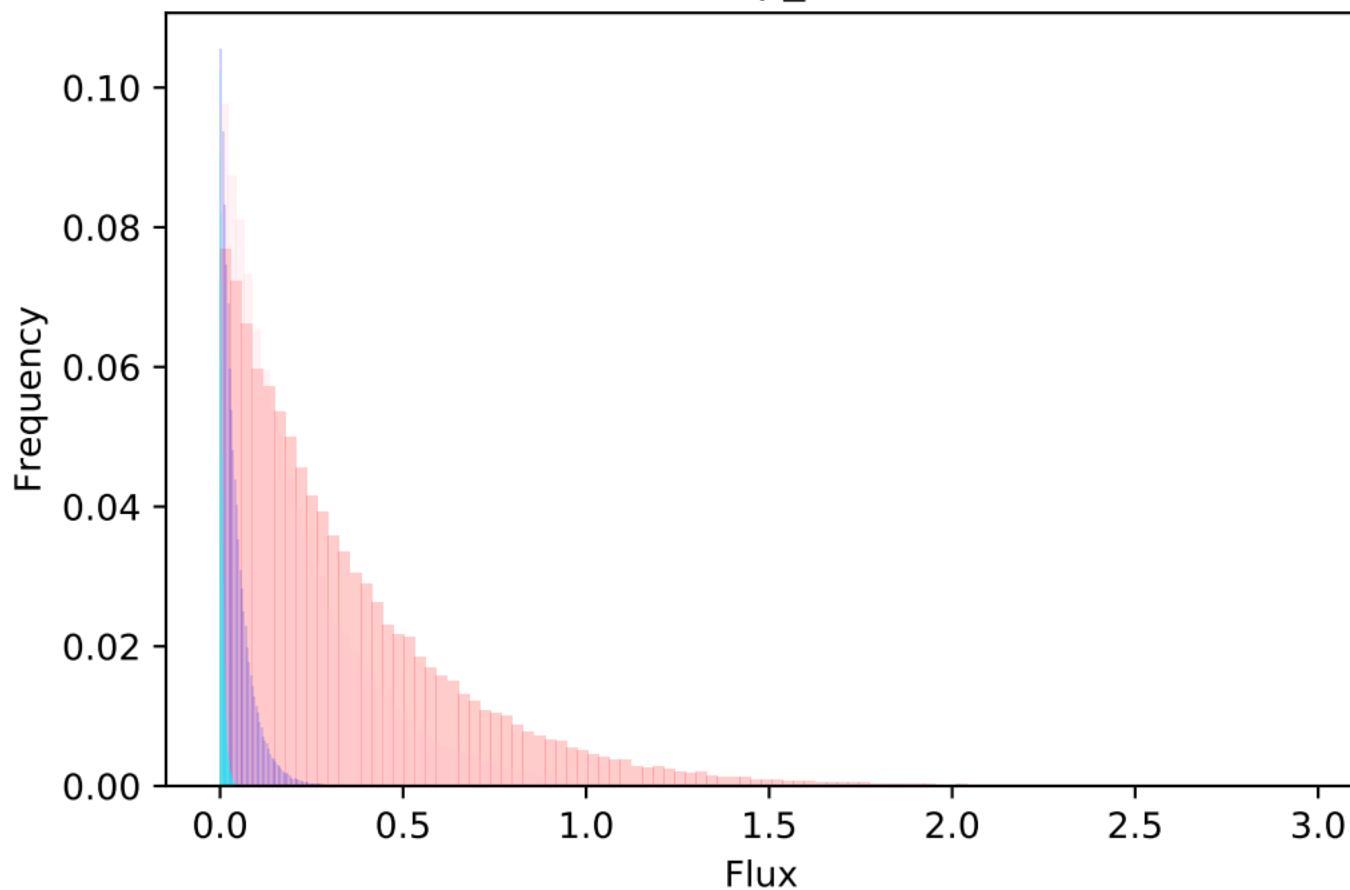
466 : Asp\_c -->



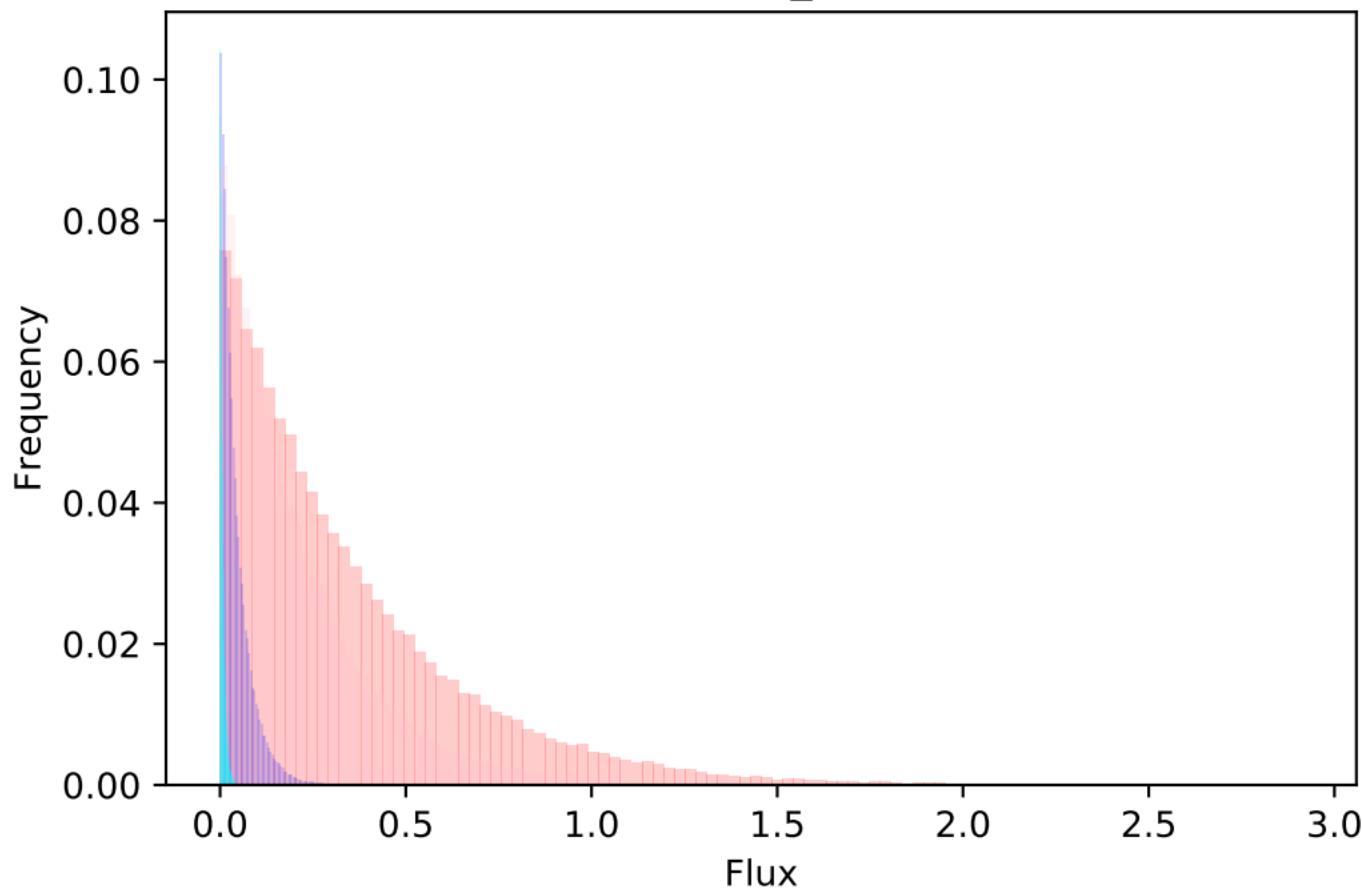
467 : Asp\_h -->



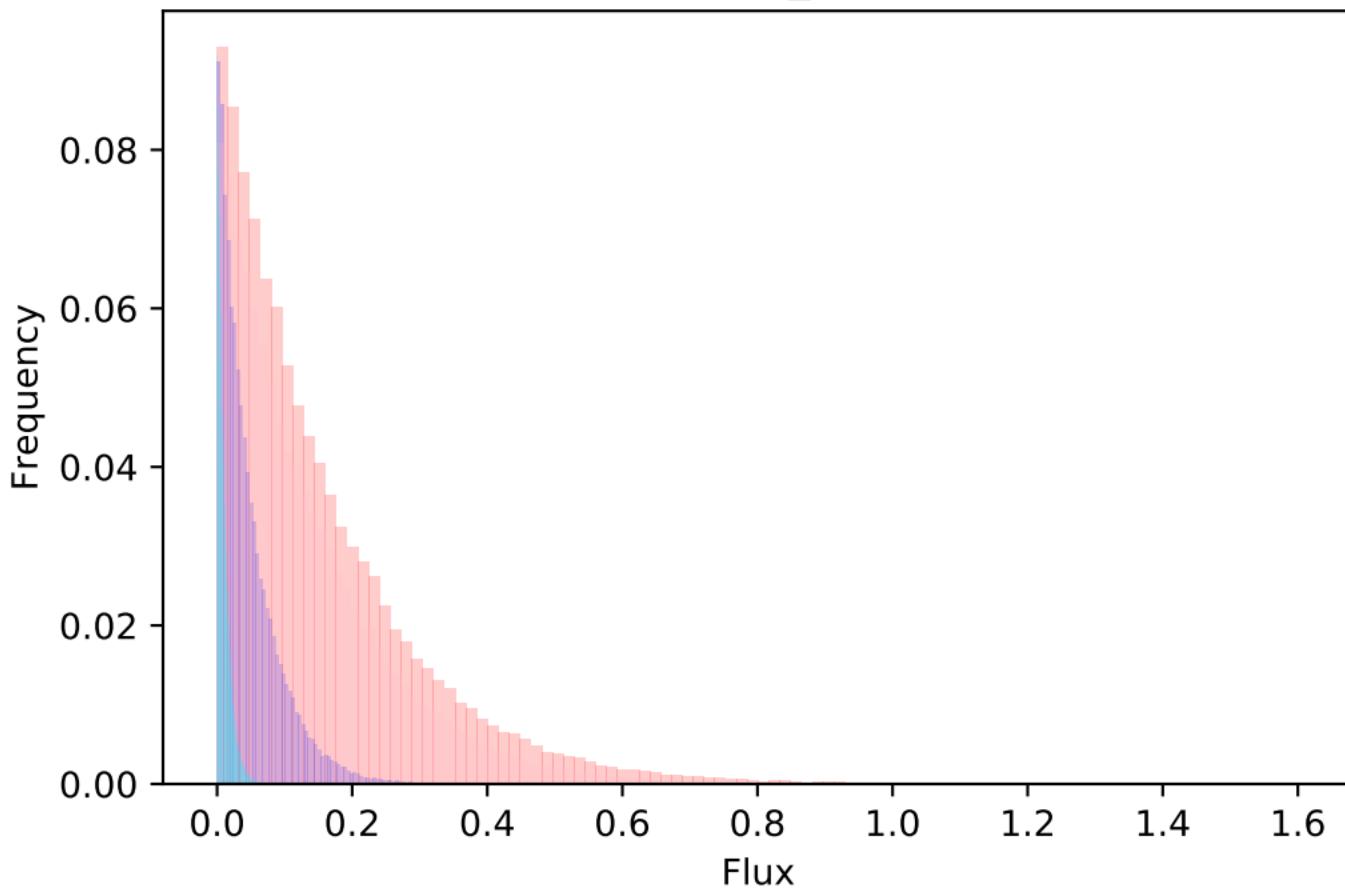
468 : Asp\_m -->



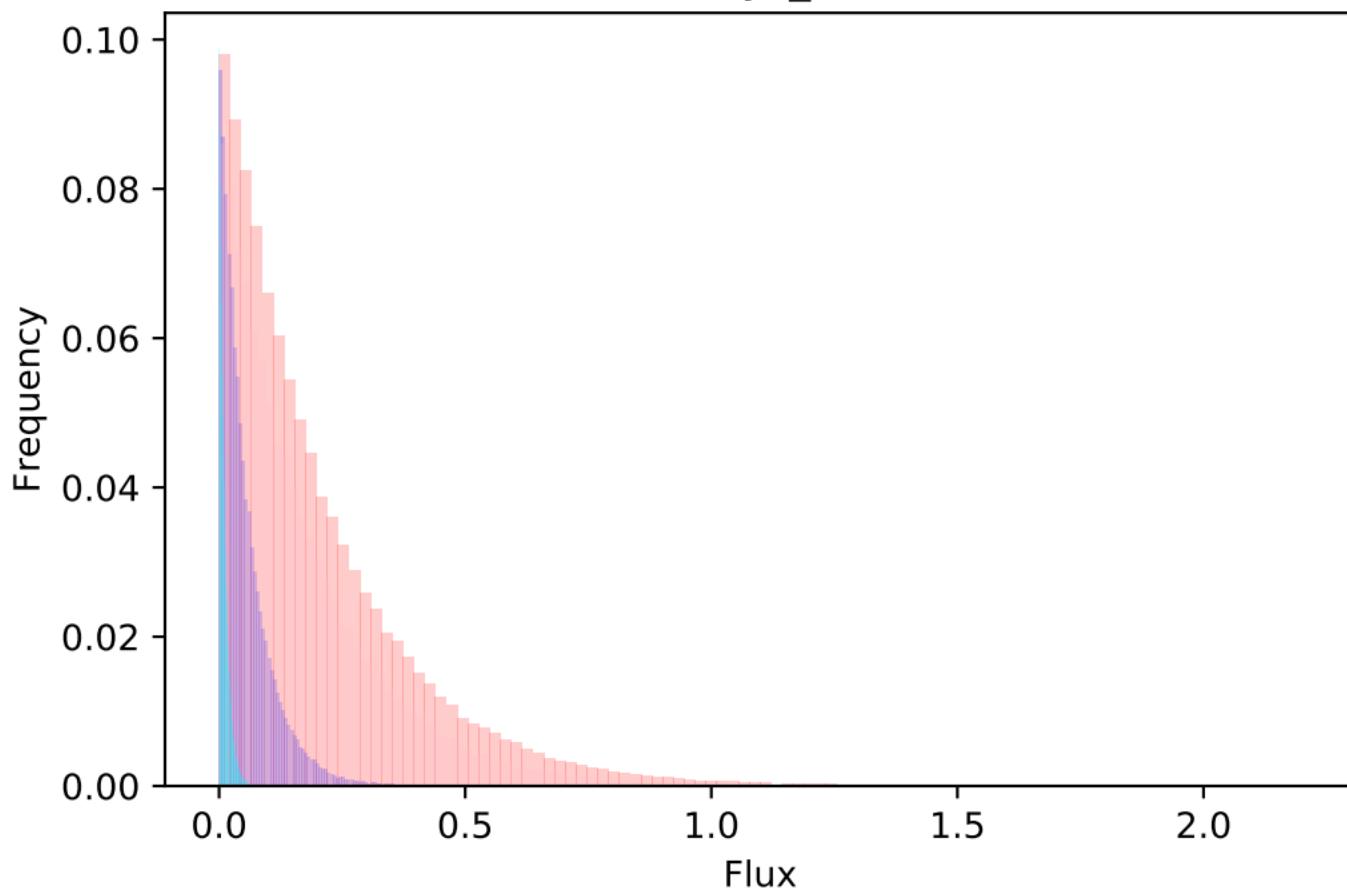
469 : Asp\_p -->



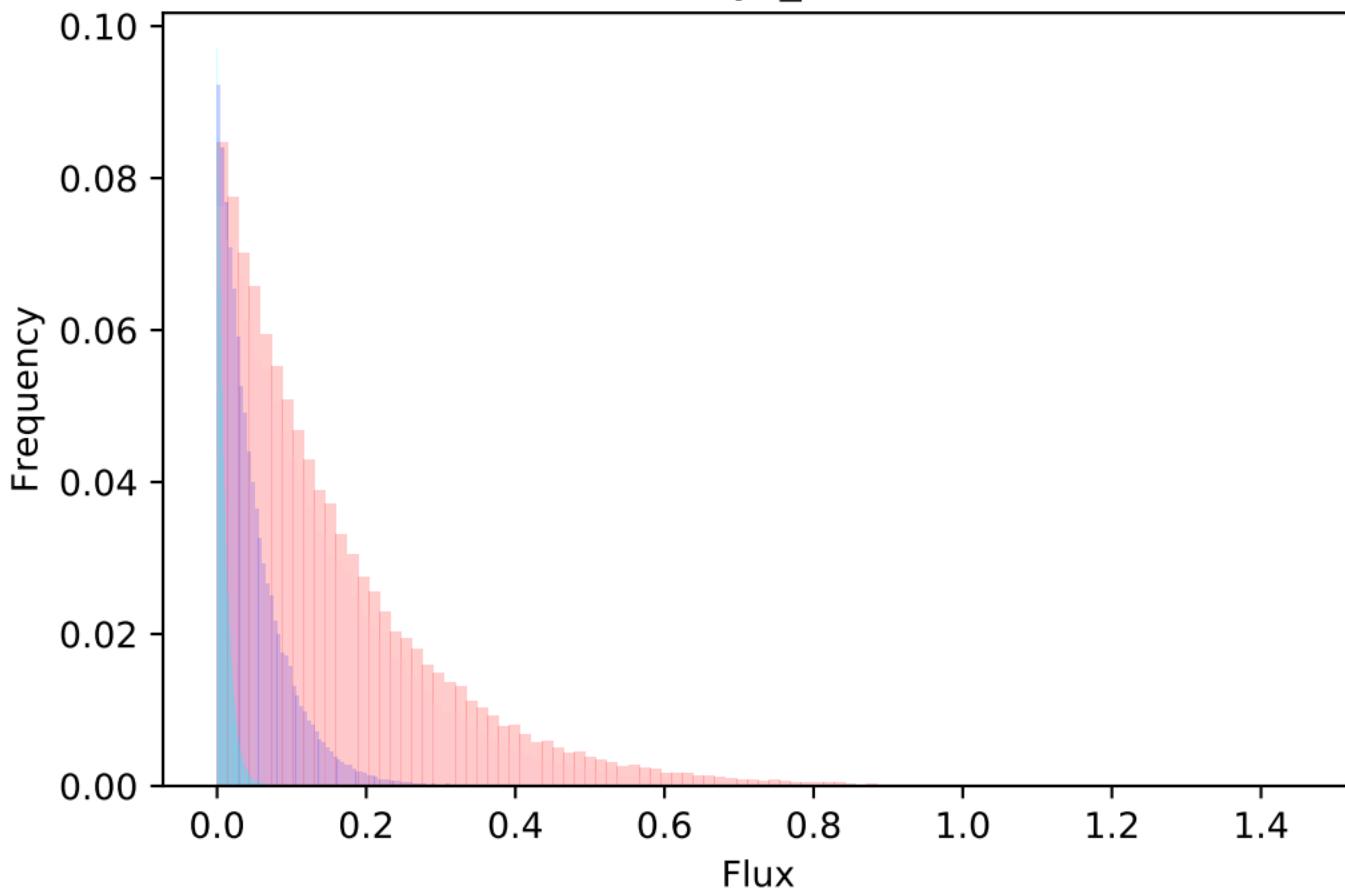
470 : Cys\_c -->



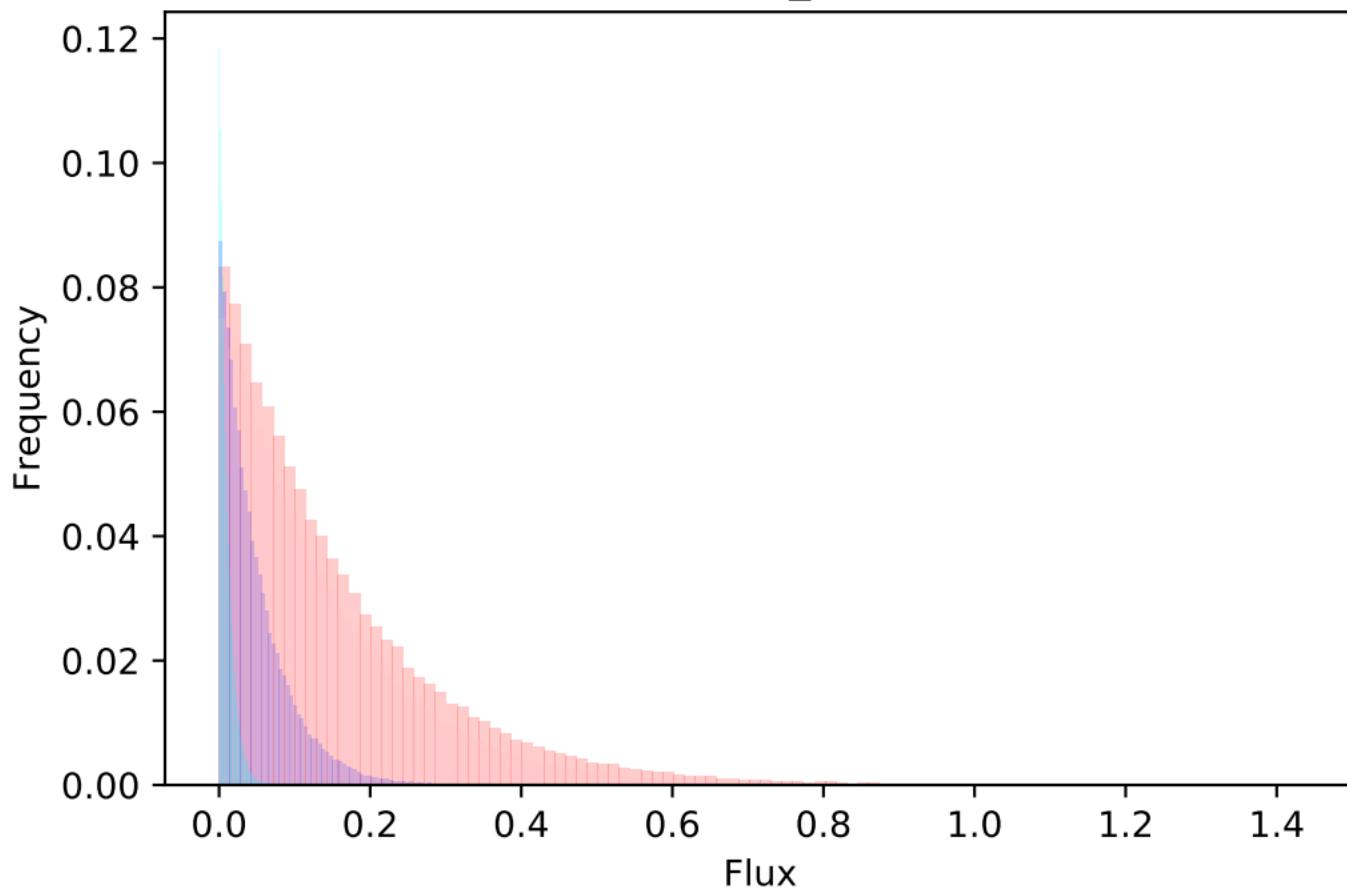
471 : Cys\_h -->



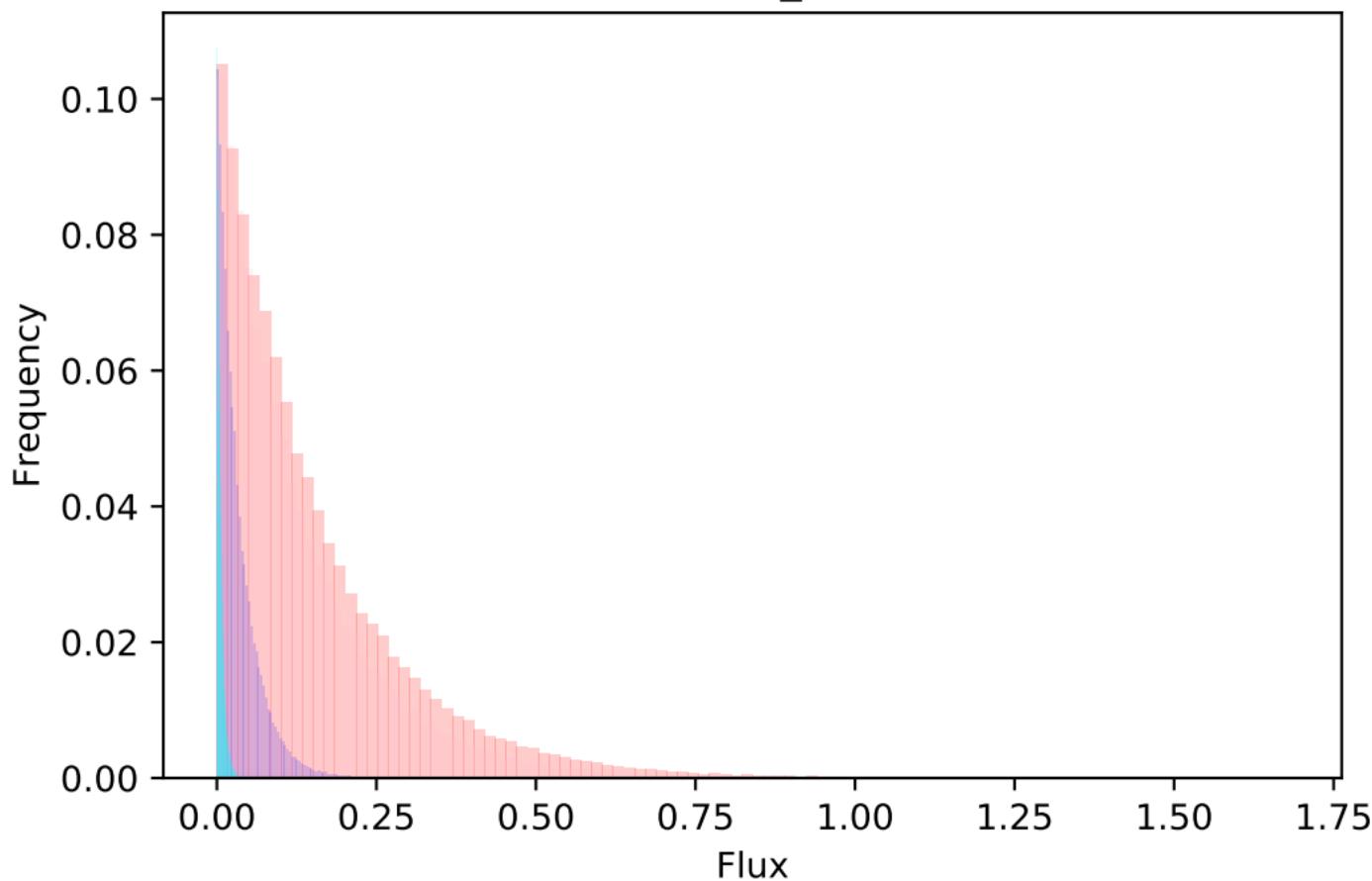
472 : Cys\_m -->



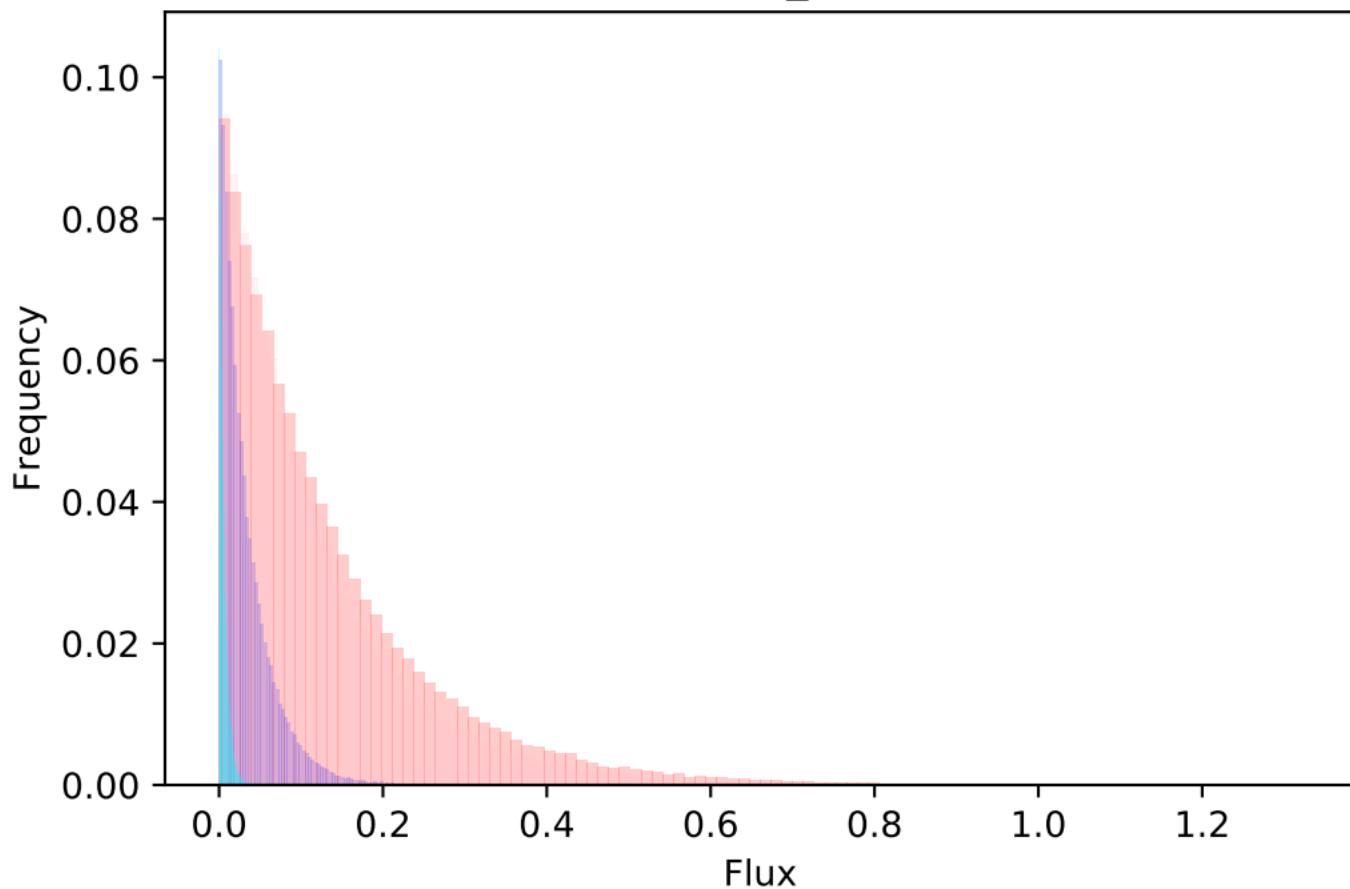
473 : Cys\_p -->



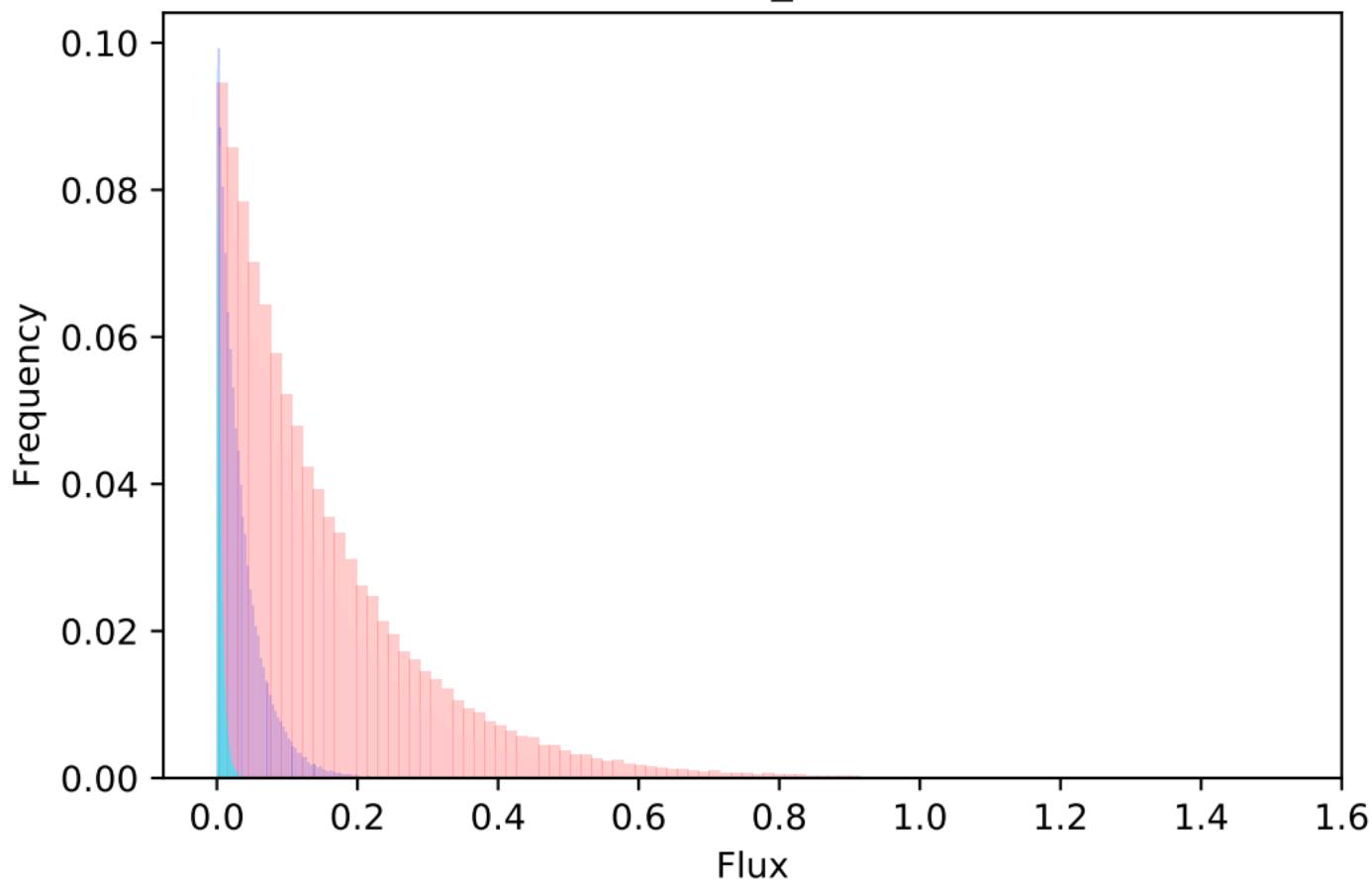
474 : Gln\_c -->



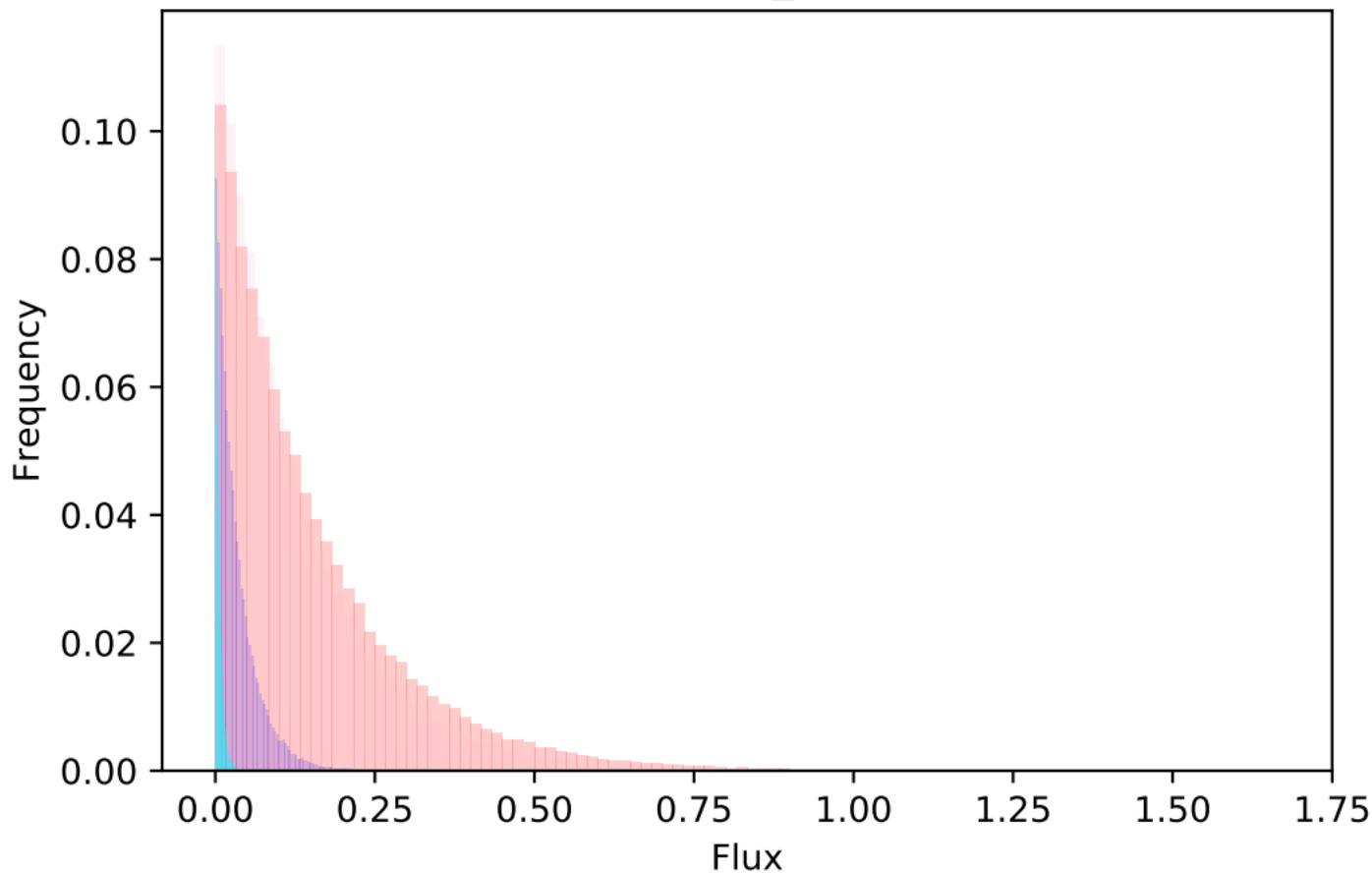
475 : Gln\_h -->



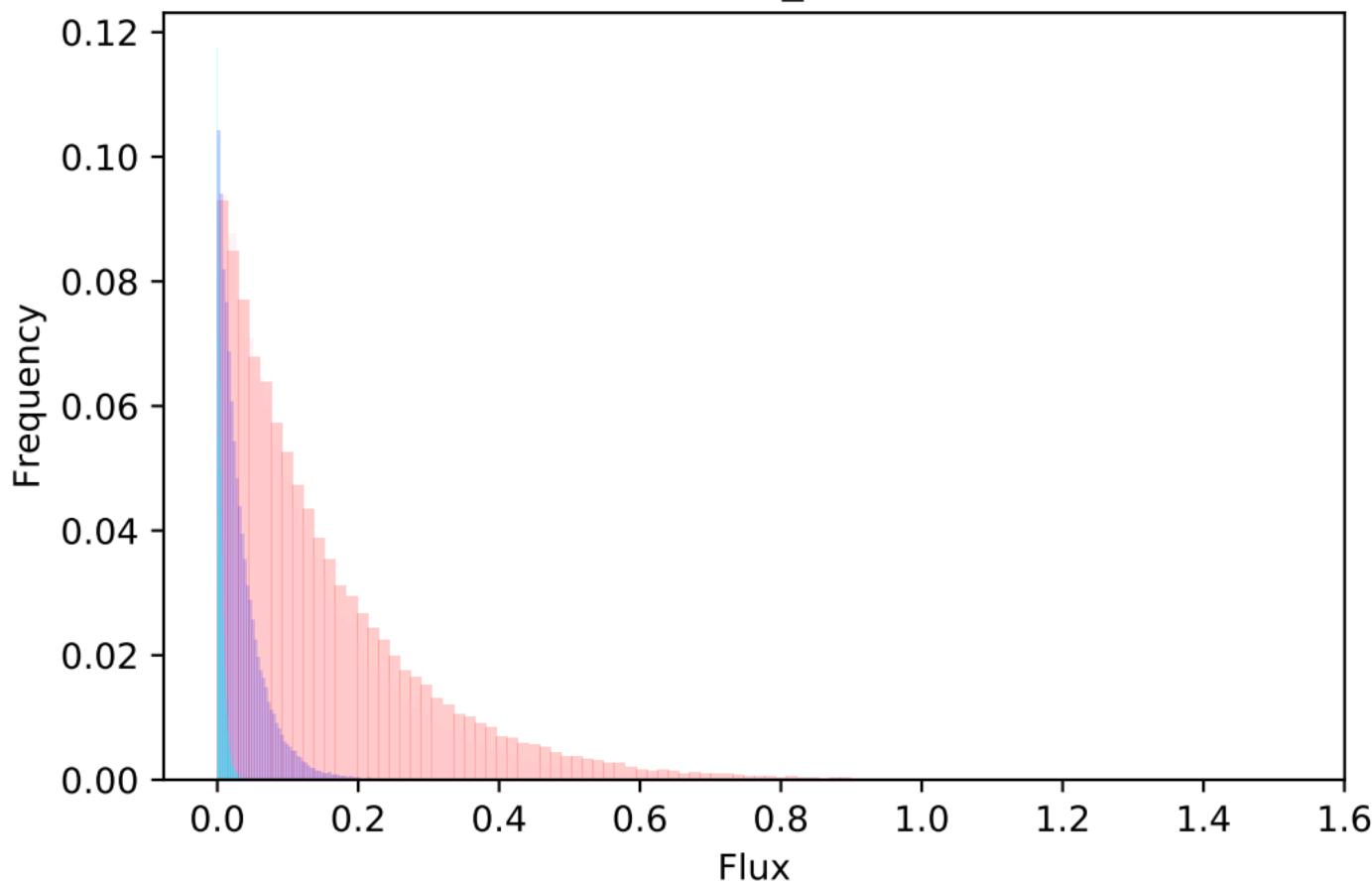
476 : Gln\_m -->



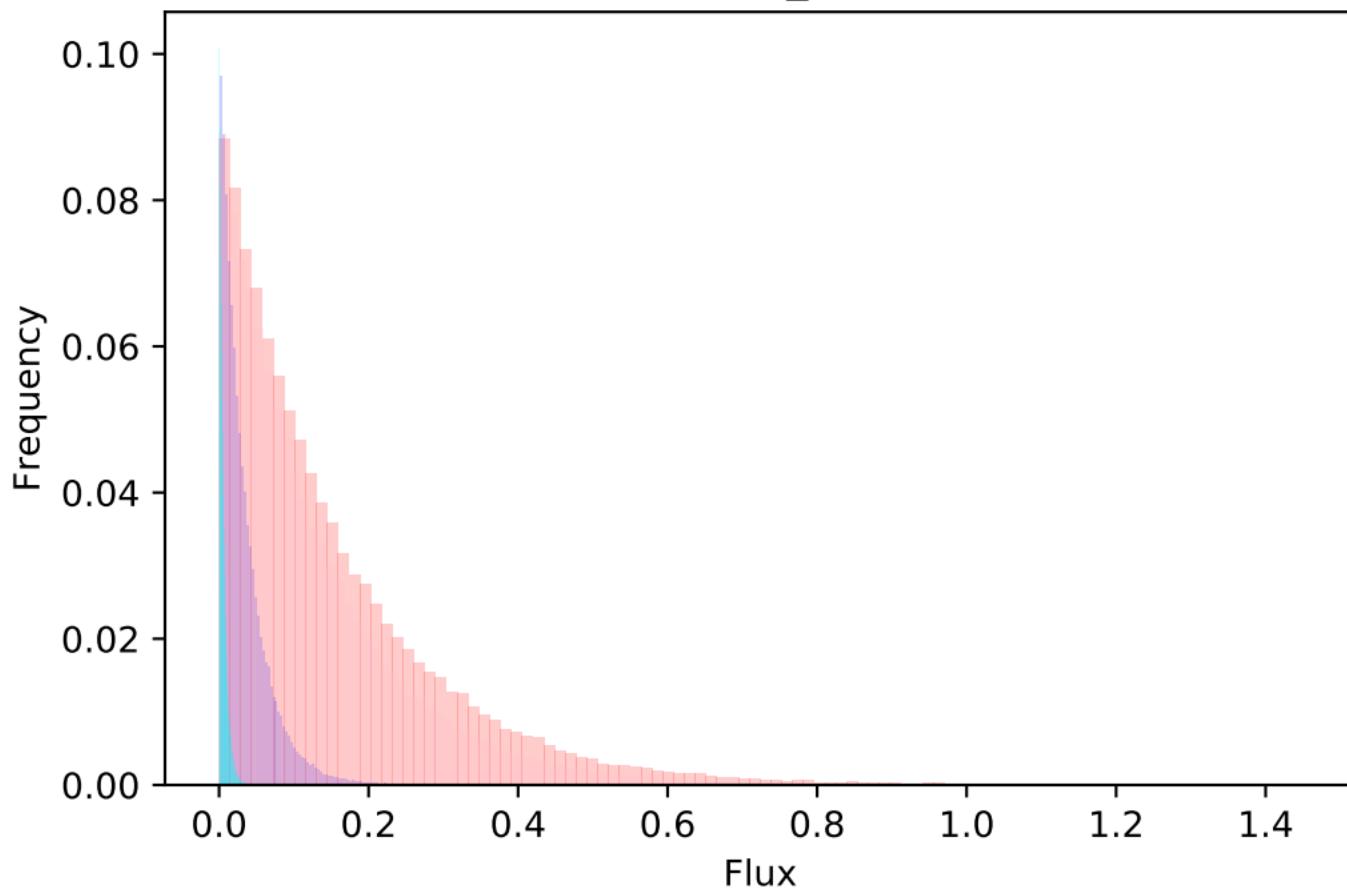
477 : Gln\_p -->



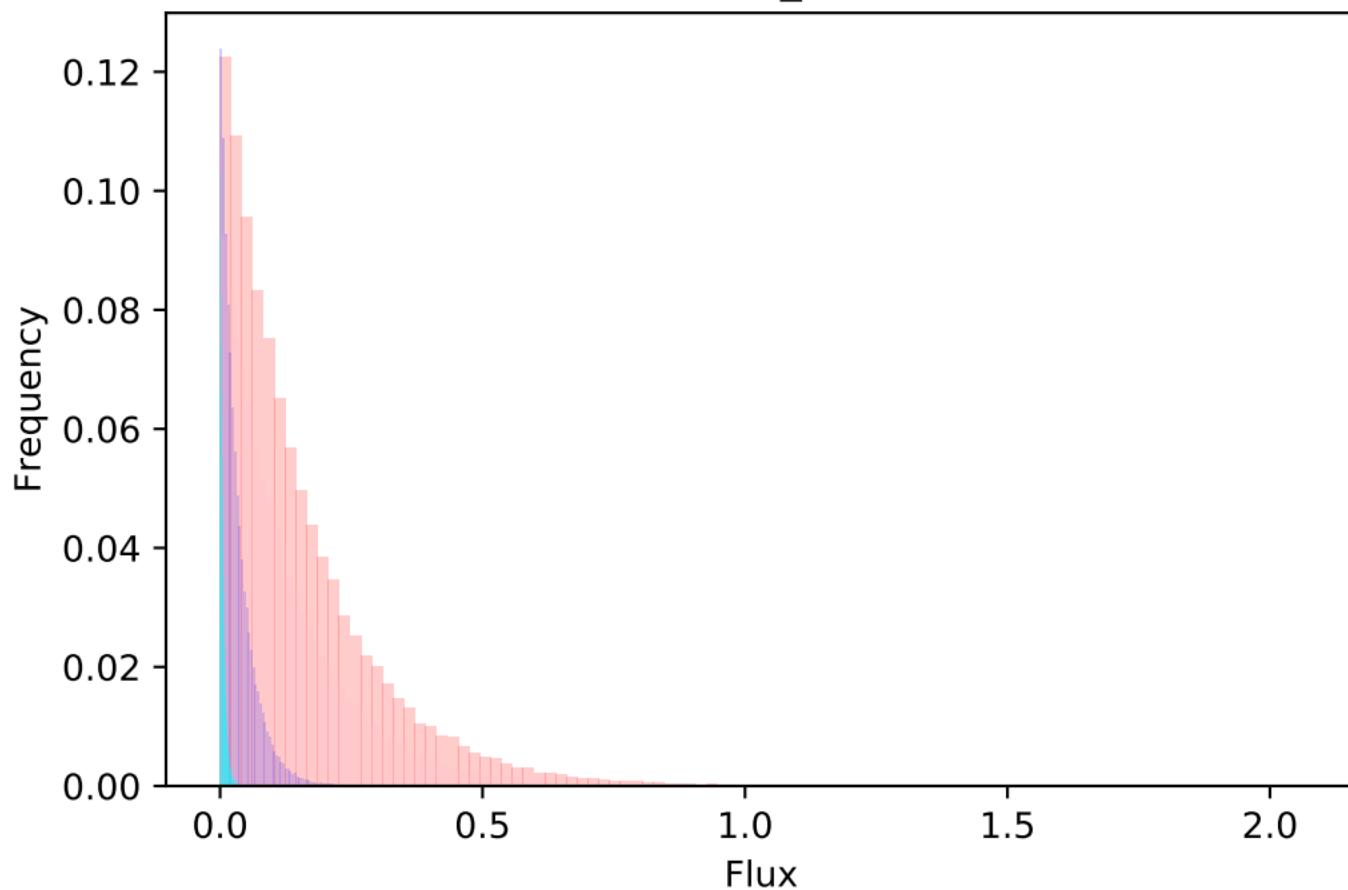
478 : Glu\_c -->



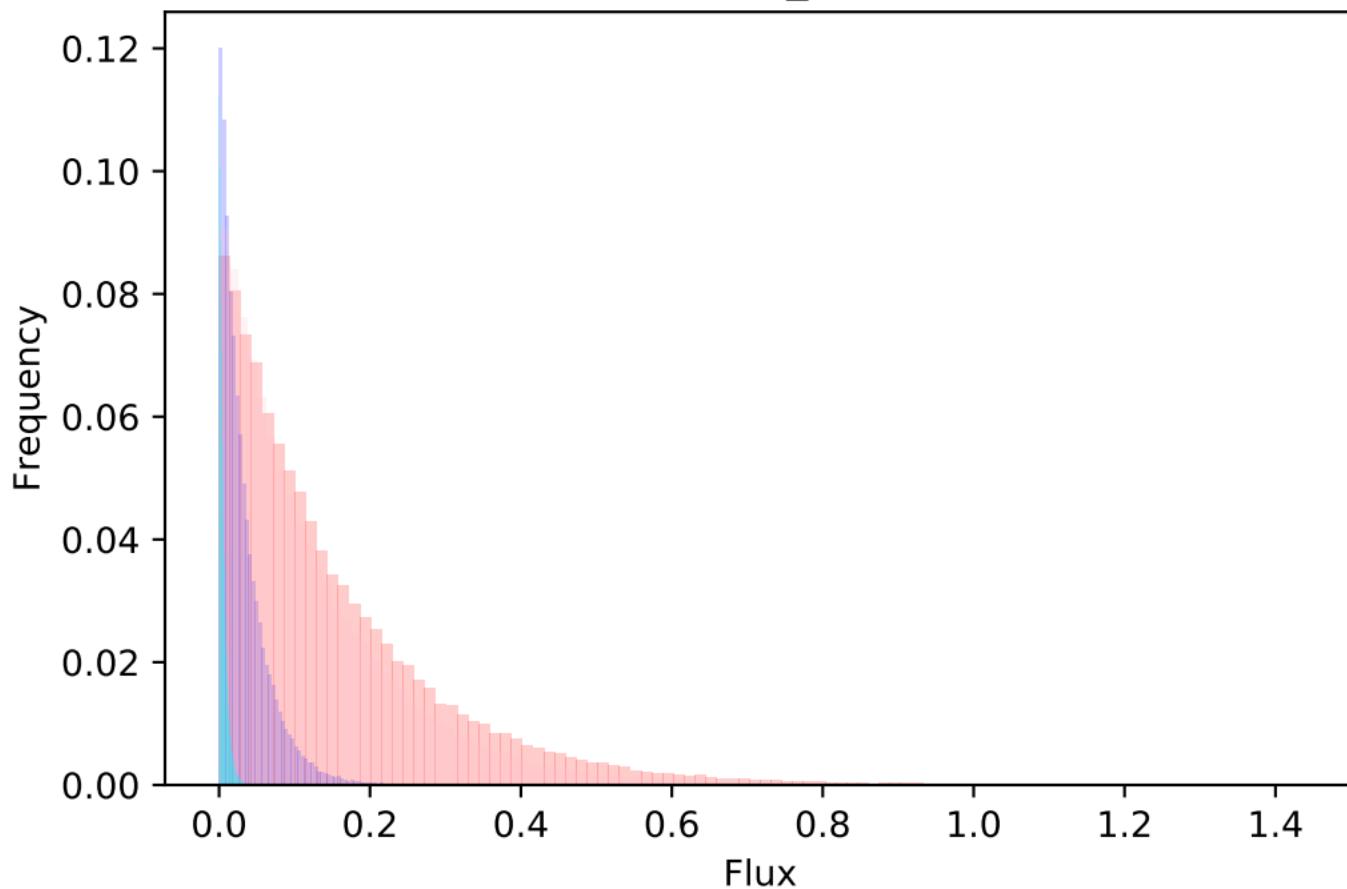
479 : Glu\_h -->



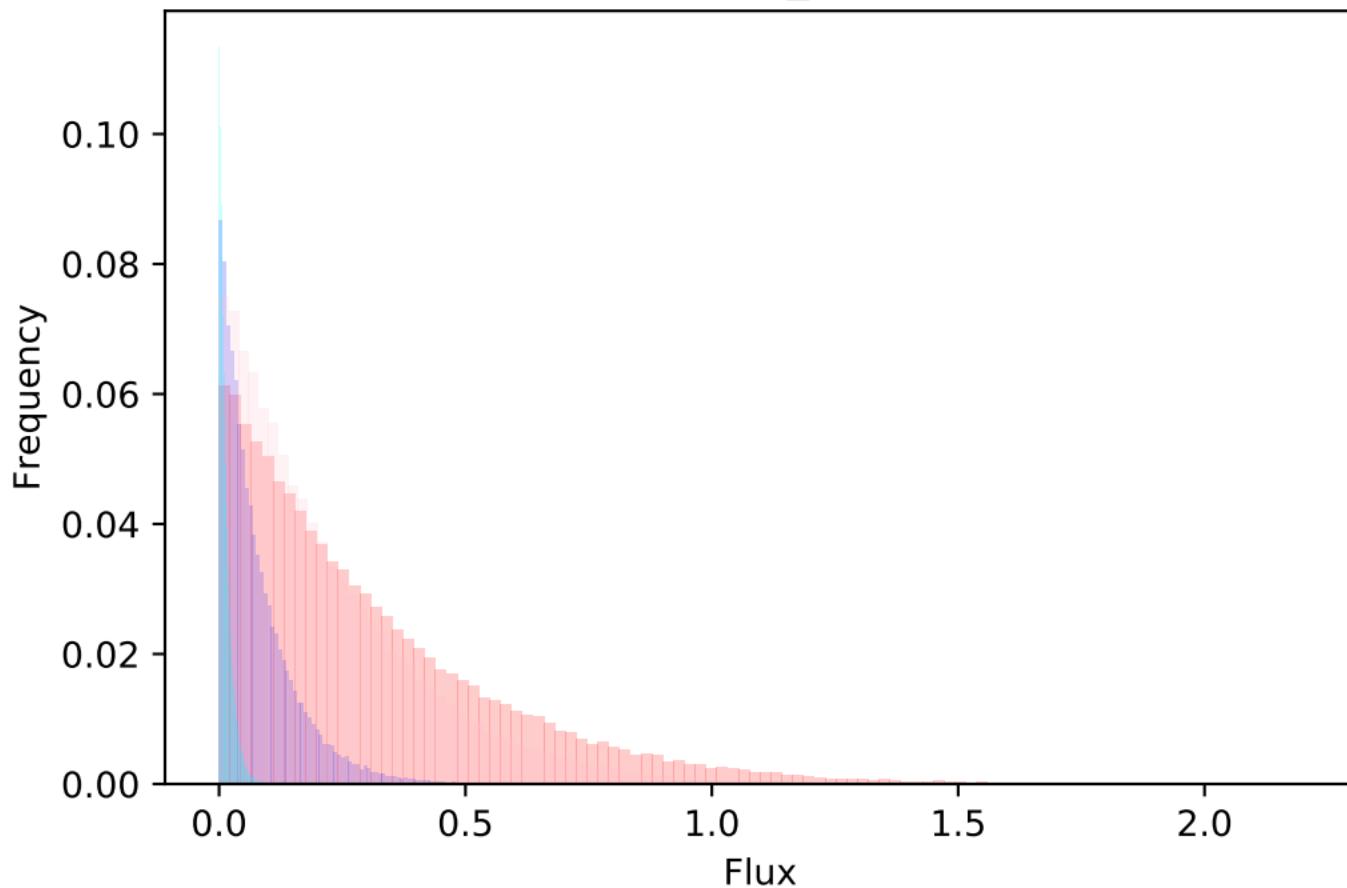
480 : Glu\_m -->



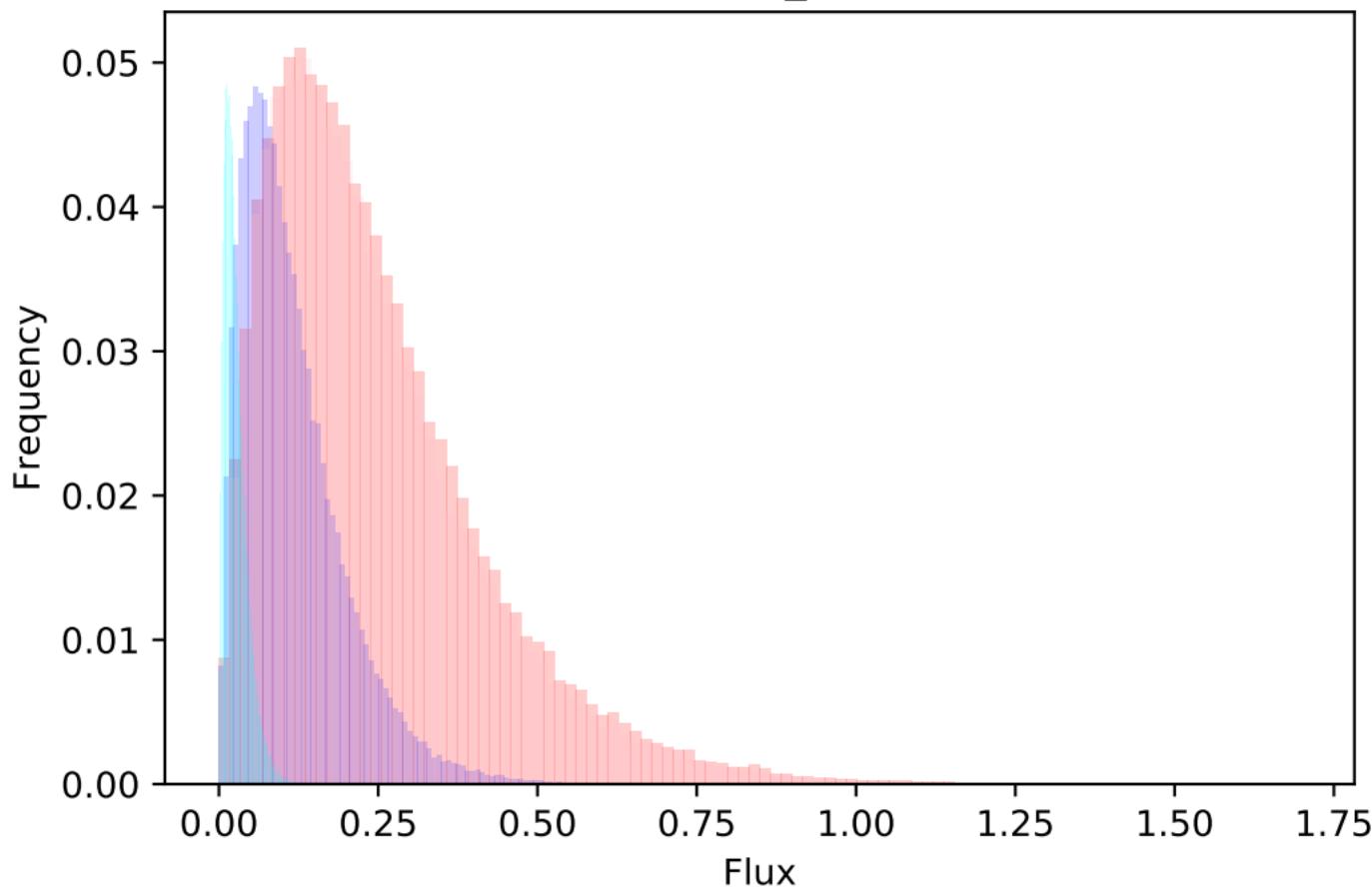
481 : Glu\_p -->



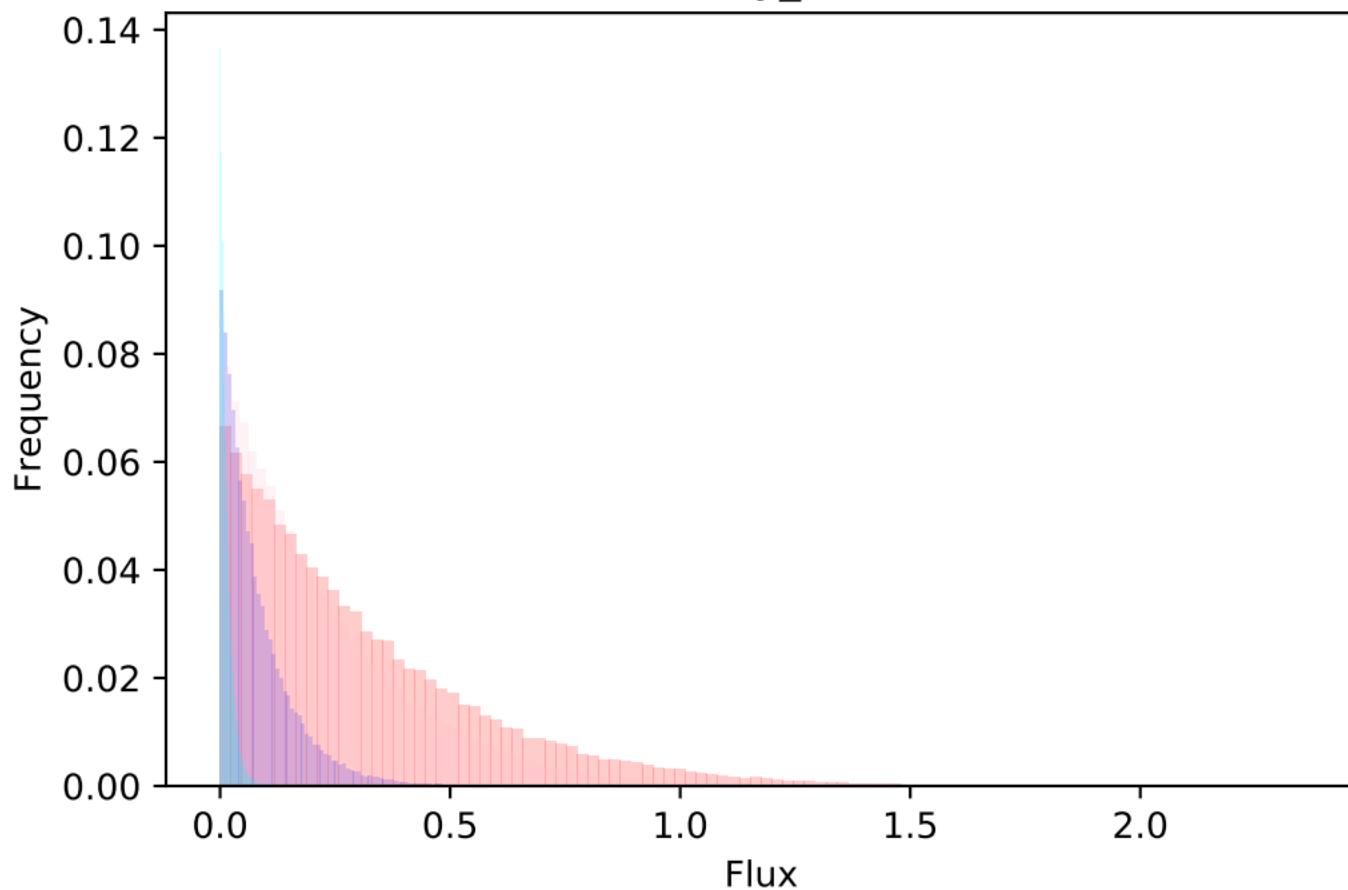
482 : Gly\_c -->



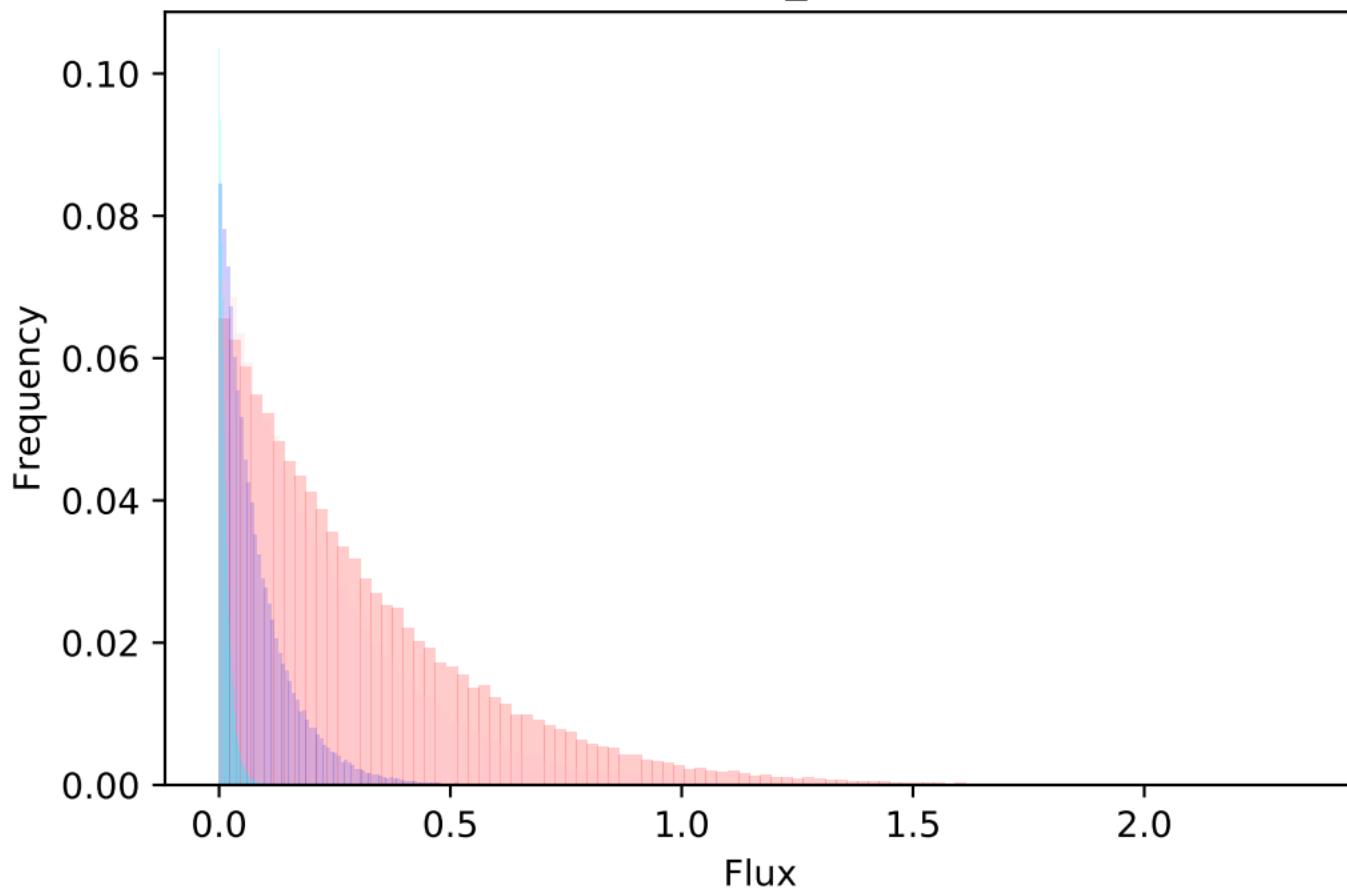
483 : Gly\_h -->



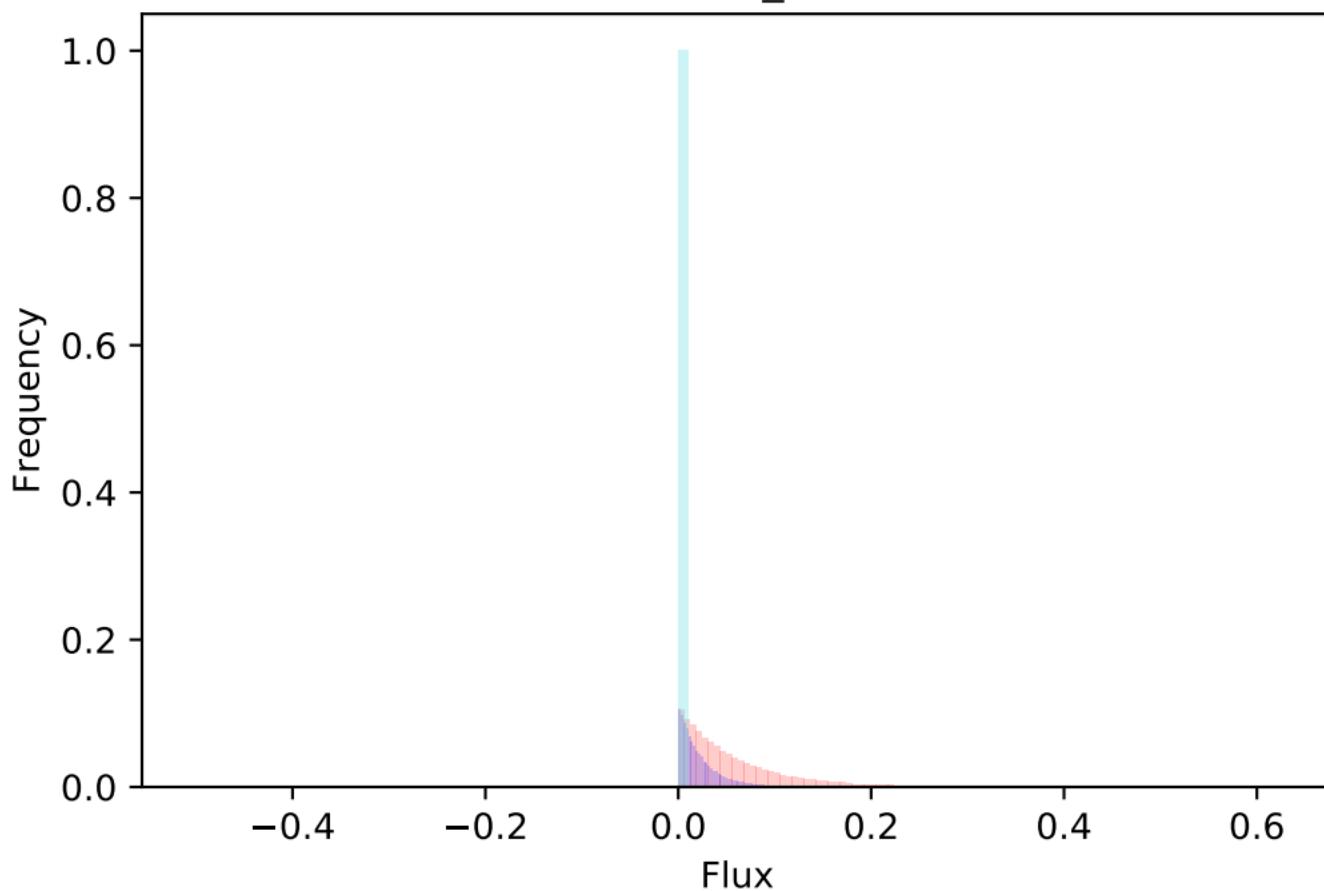
484 : Gly\_m -->



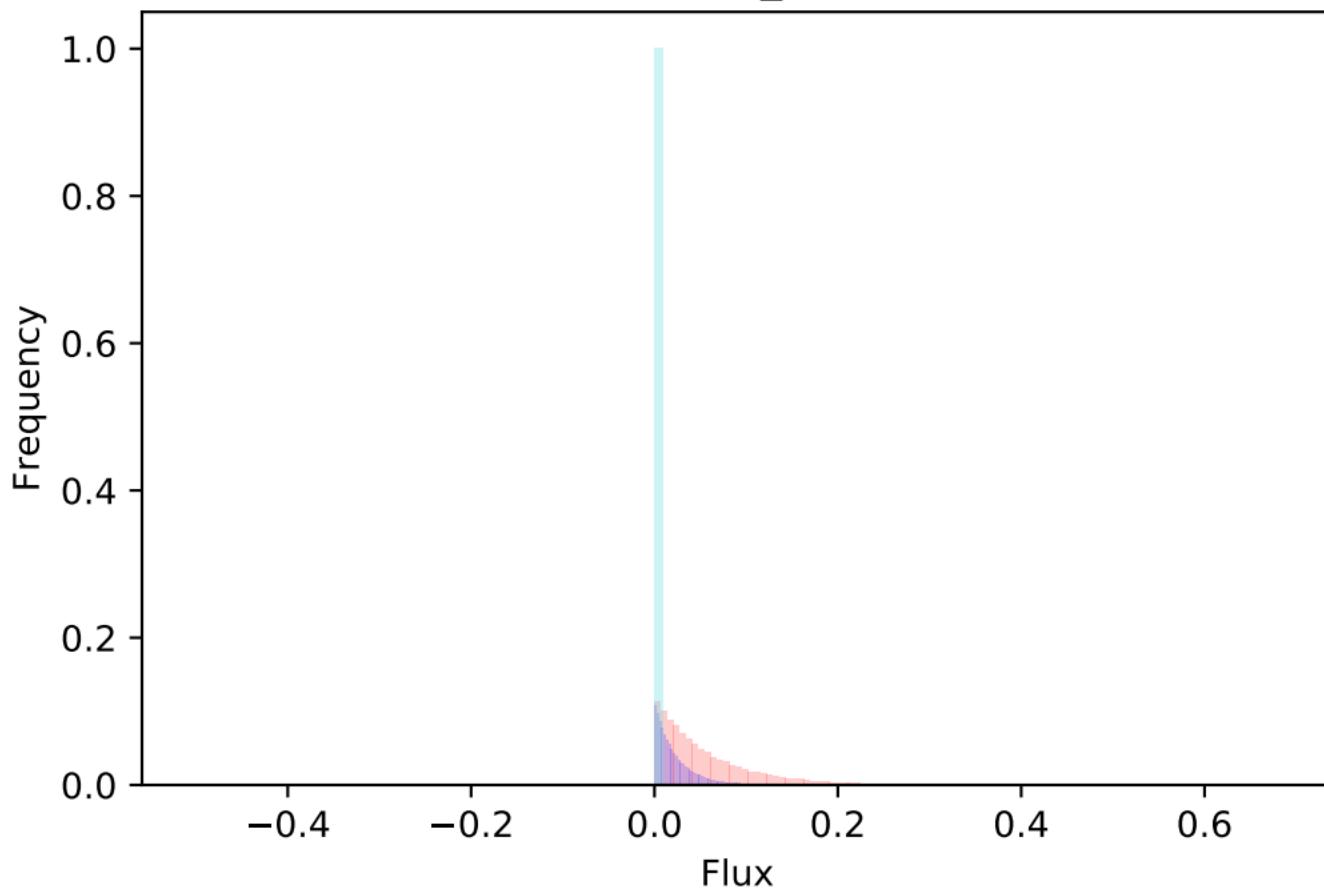
485 : Gly\_p -->



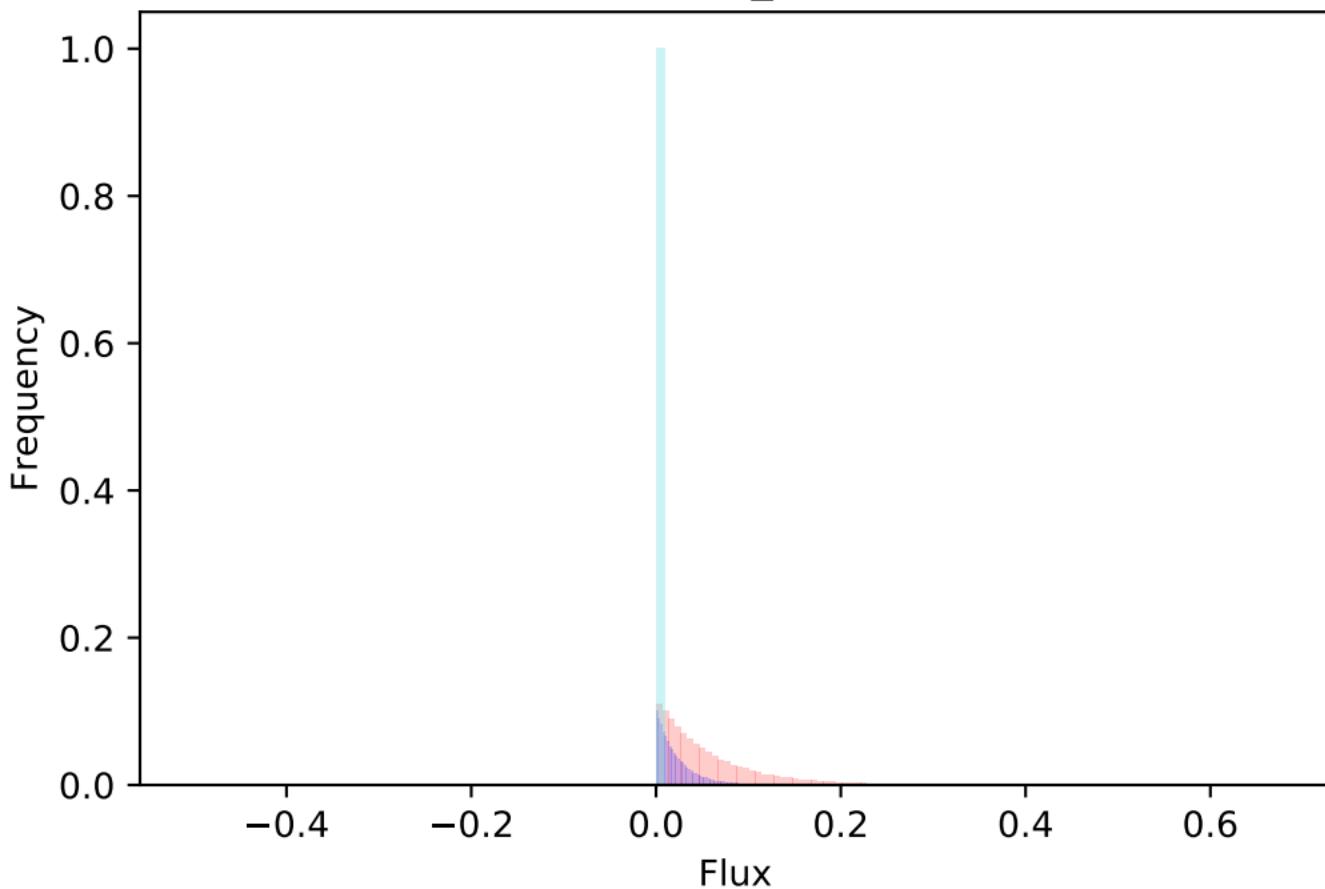
486 : His\_c -->



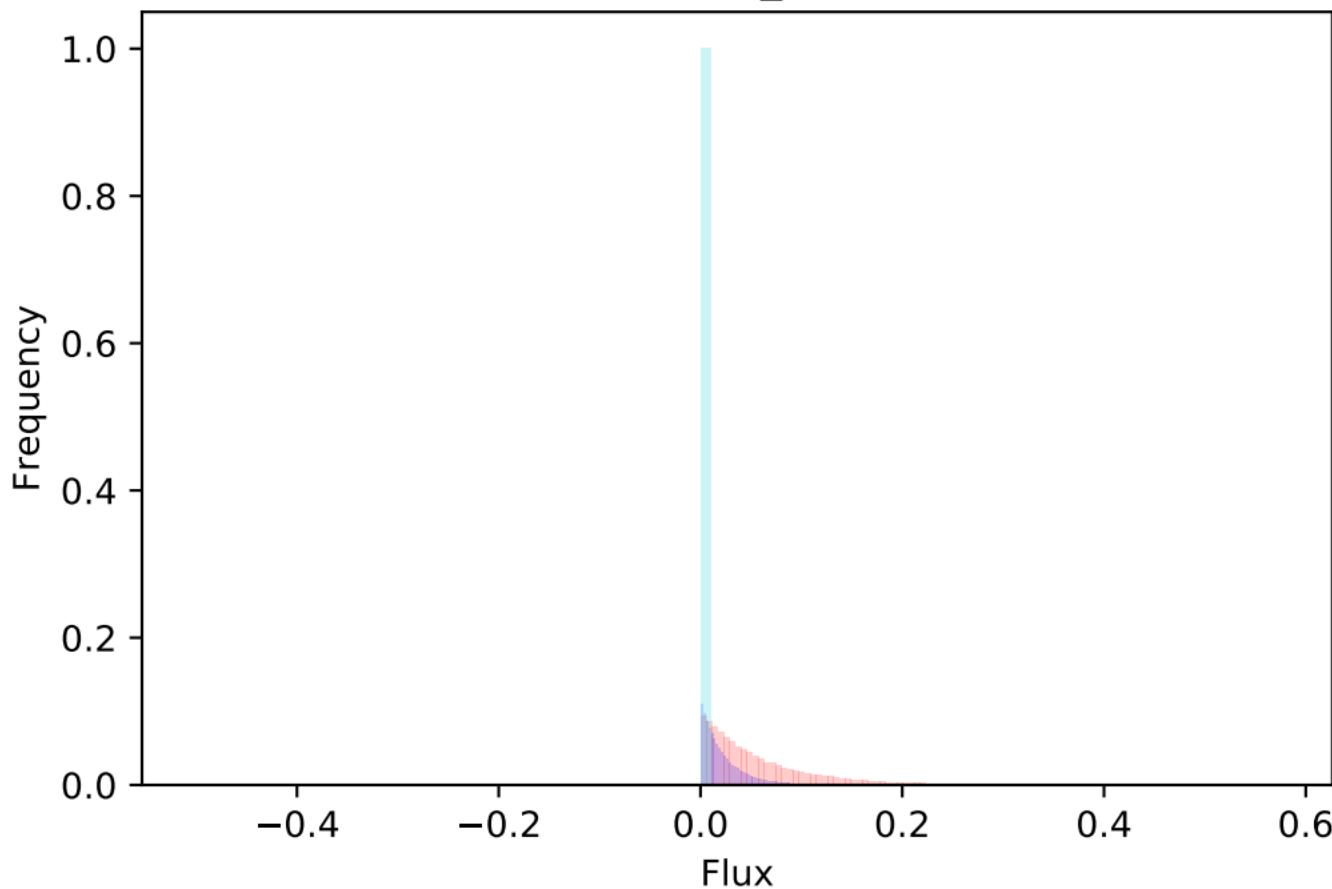
487 : His\_h -->



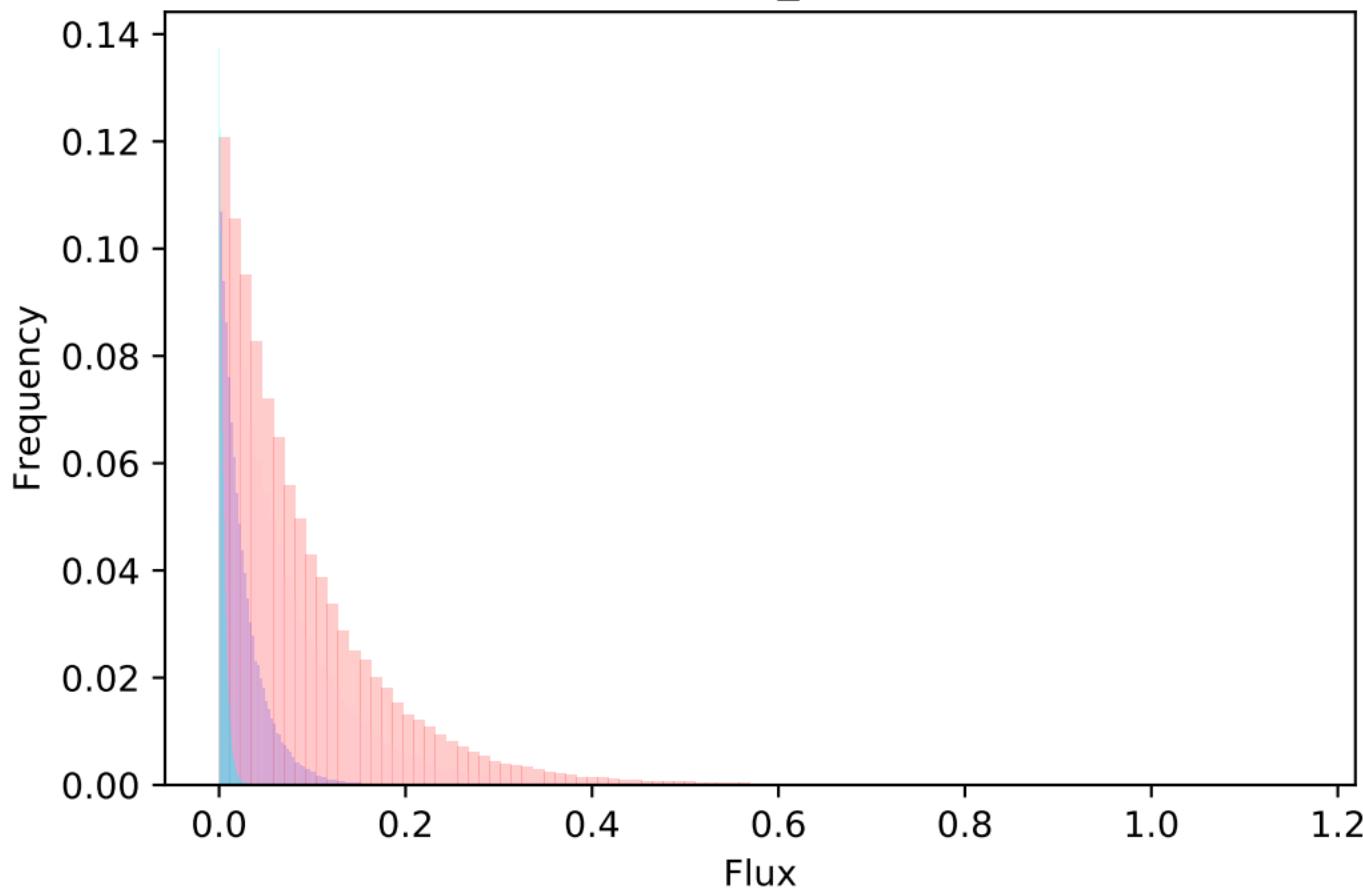
488 : His\_m -->



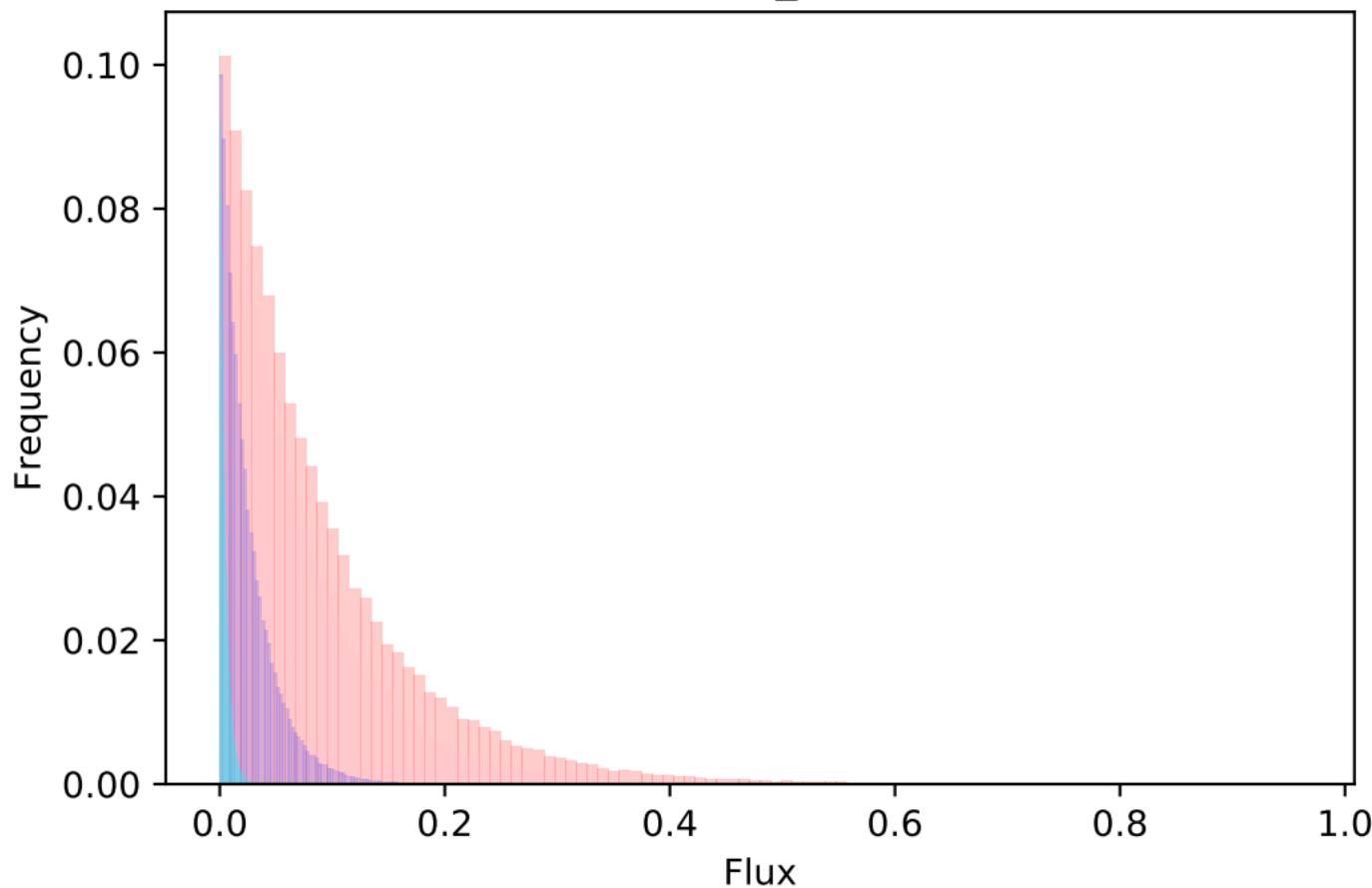
489 : His\_p -->



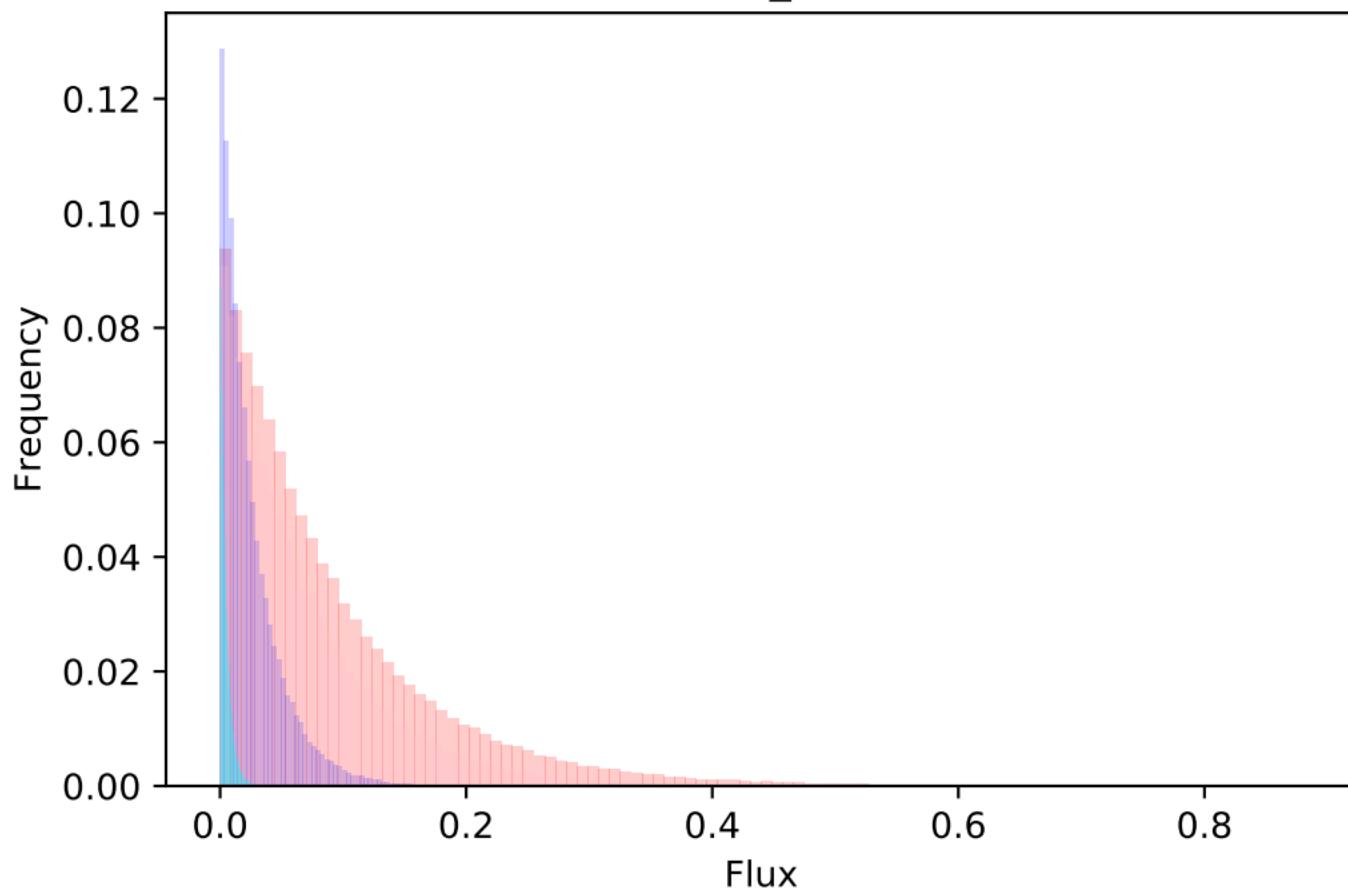
490 : He\_c -->



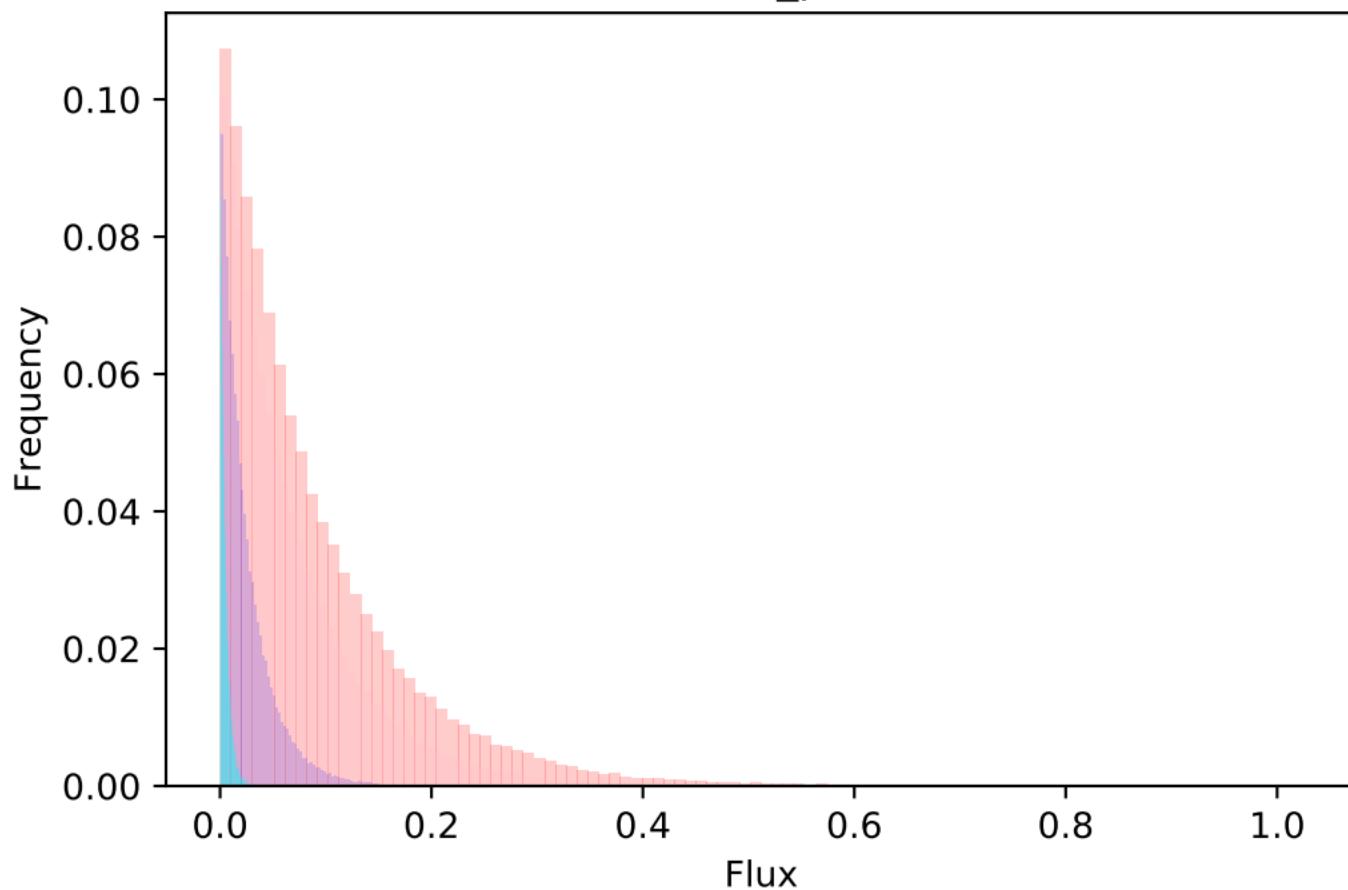
491 : Ile\_h -->



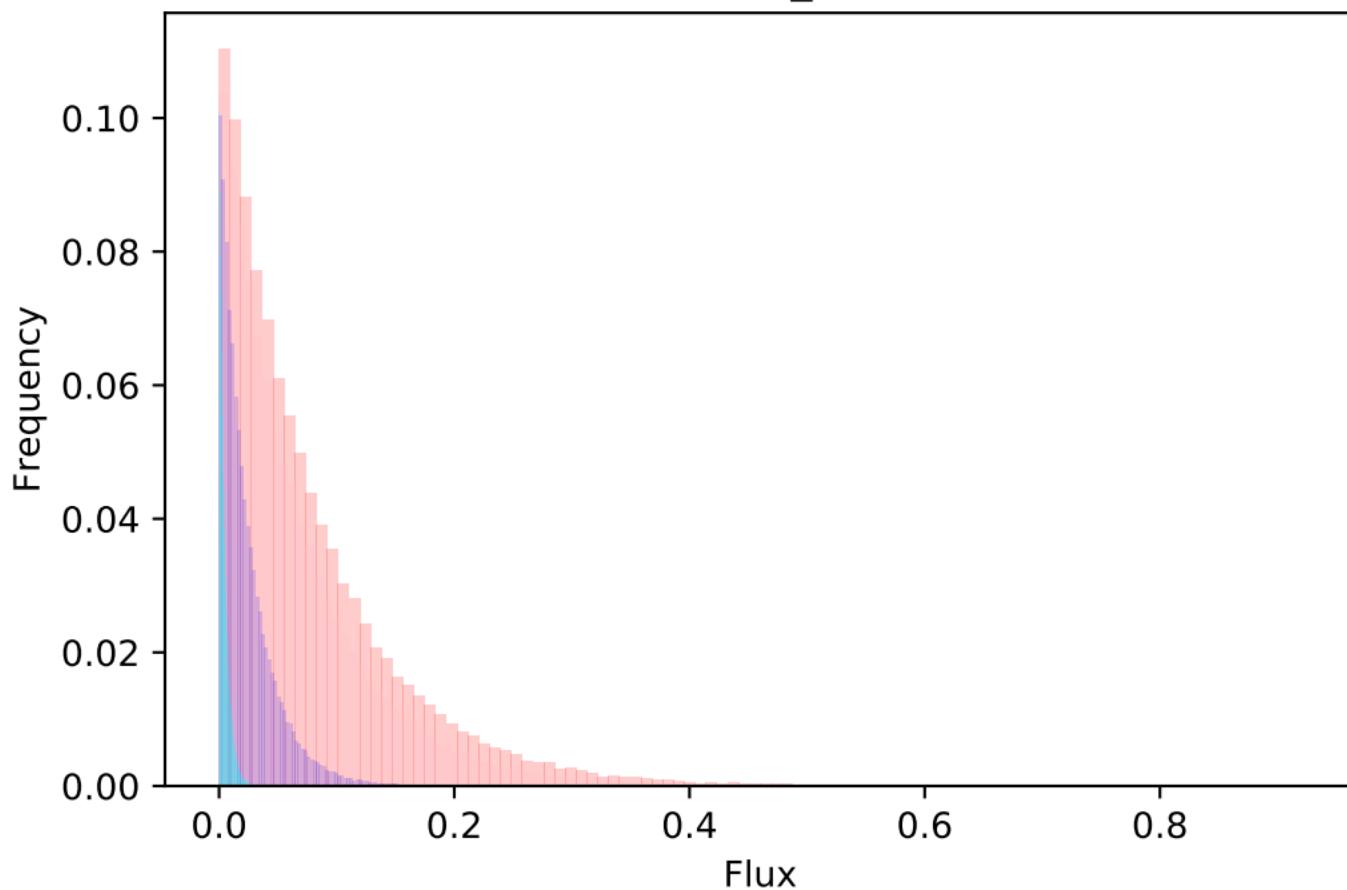
492 : ll\_e\_m -->



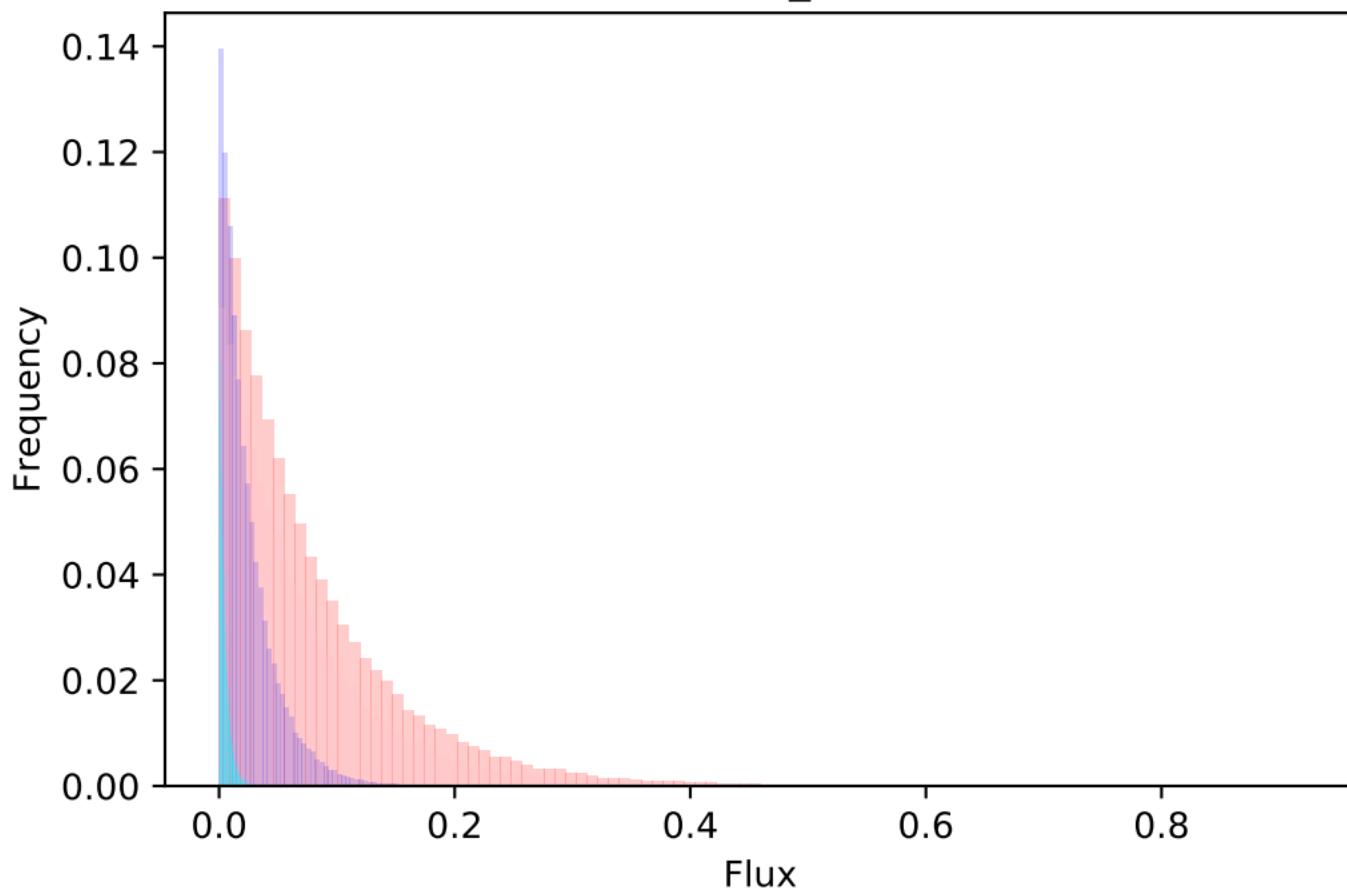
493 : Ile\_p -->



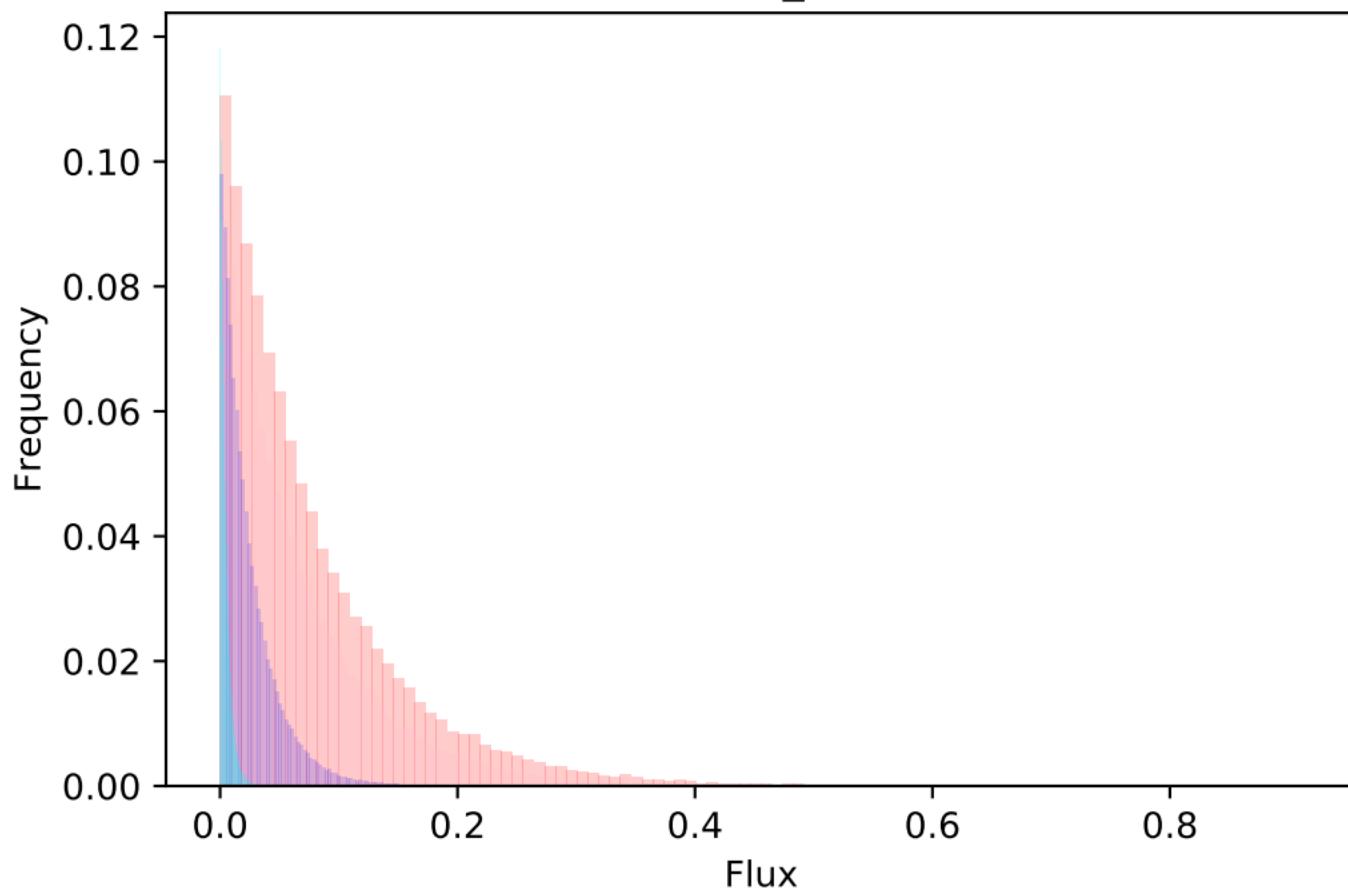
494 : Leu\_c -->



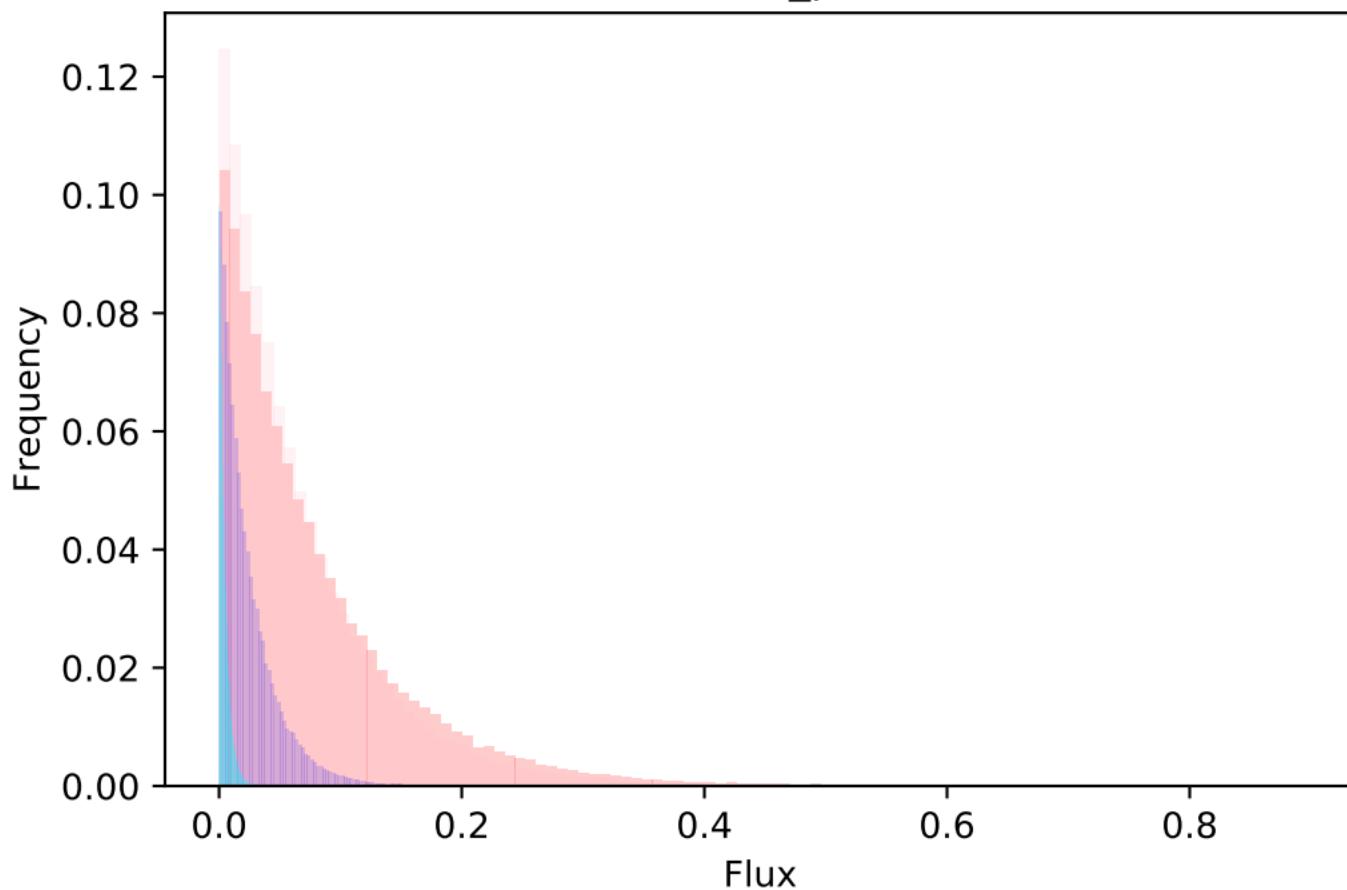
495 : Leu\_h -->



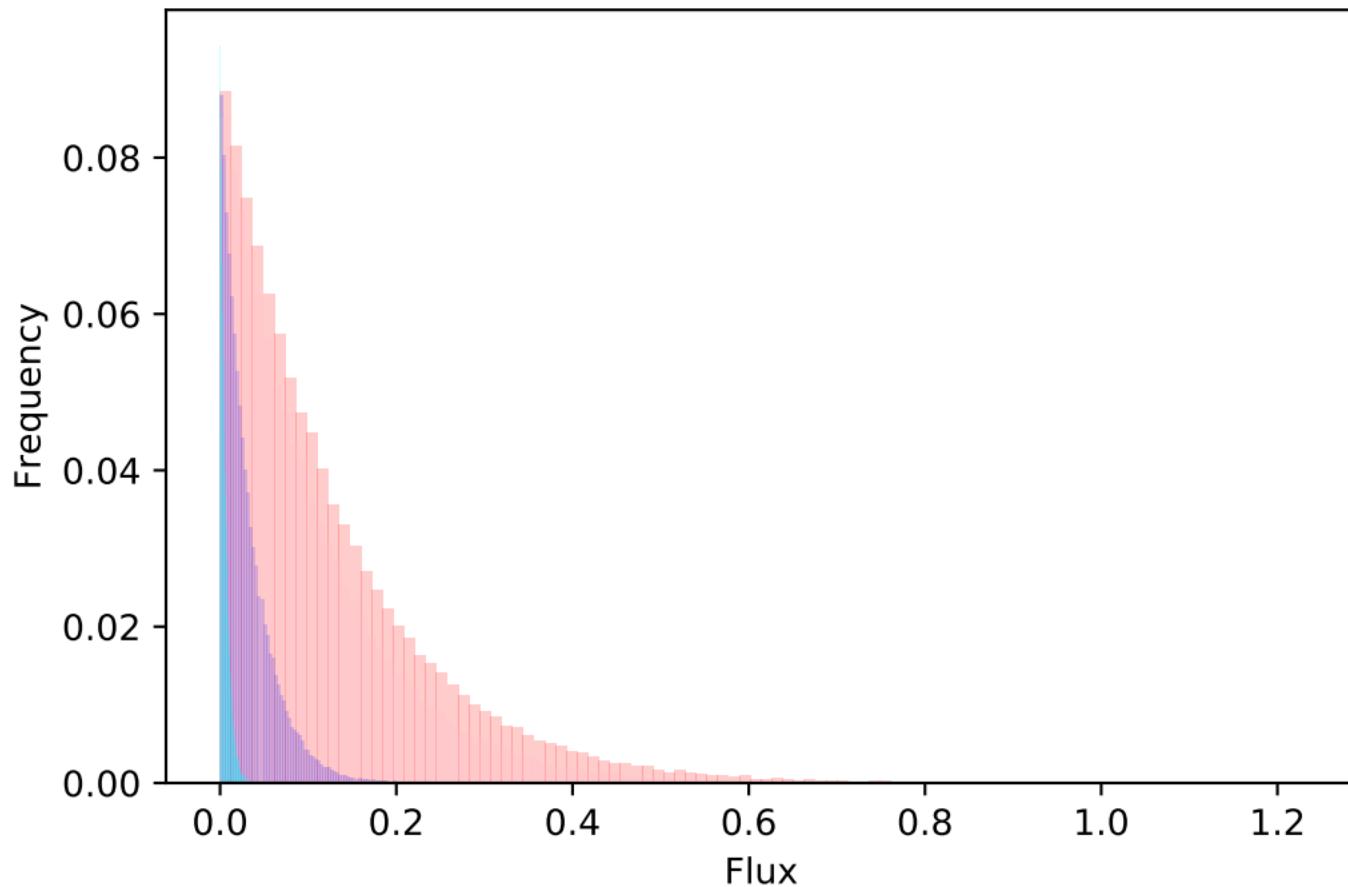
496 : Leu\_m -->



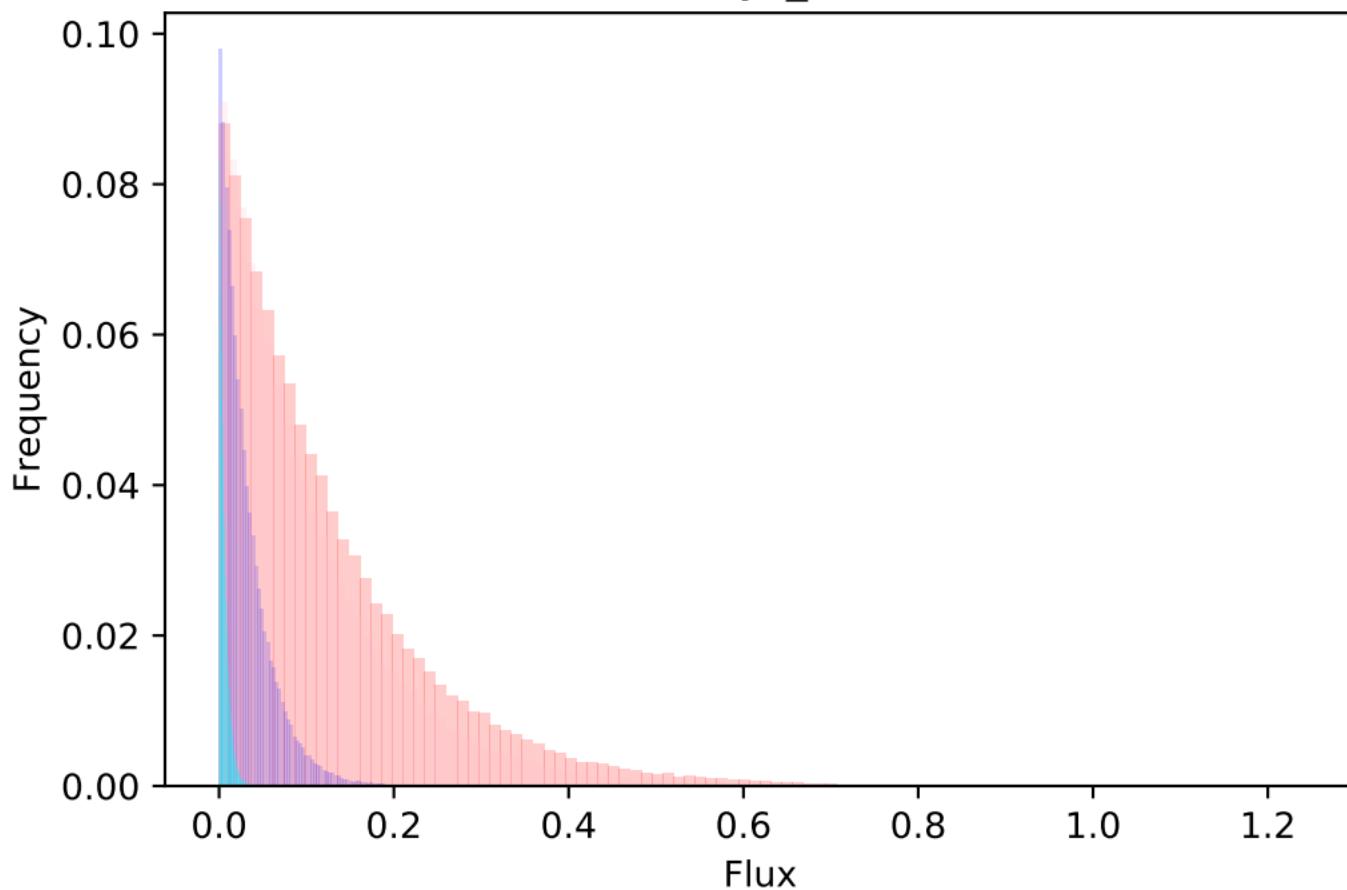
497 : Leu\_p -->



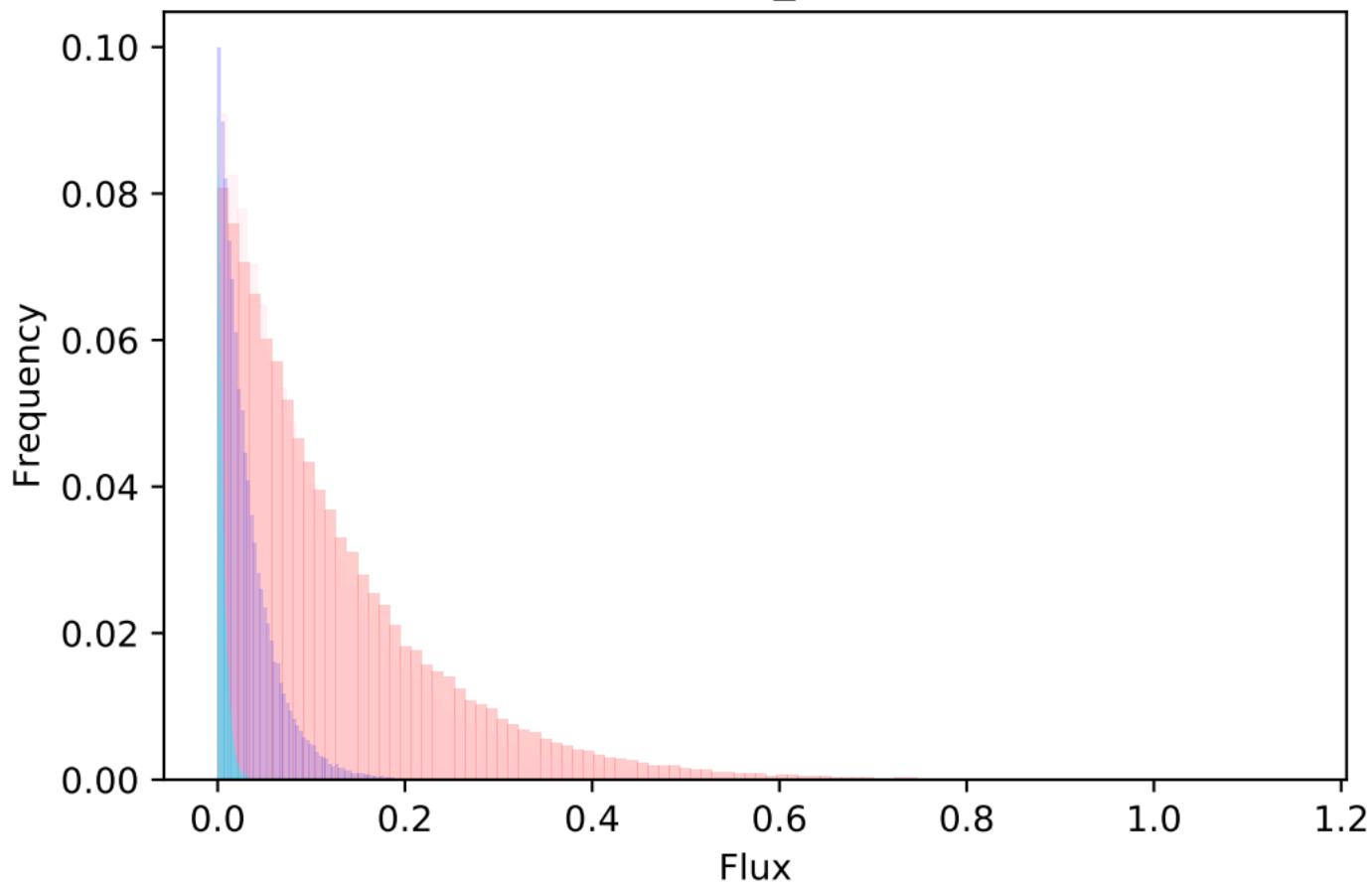
498 : Lys\_c -->



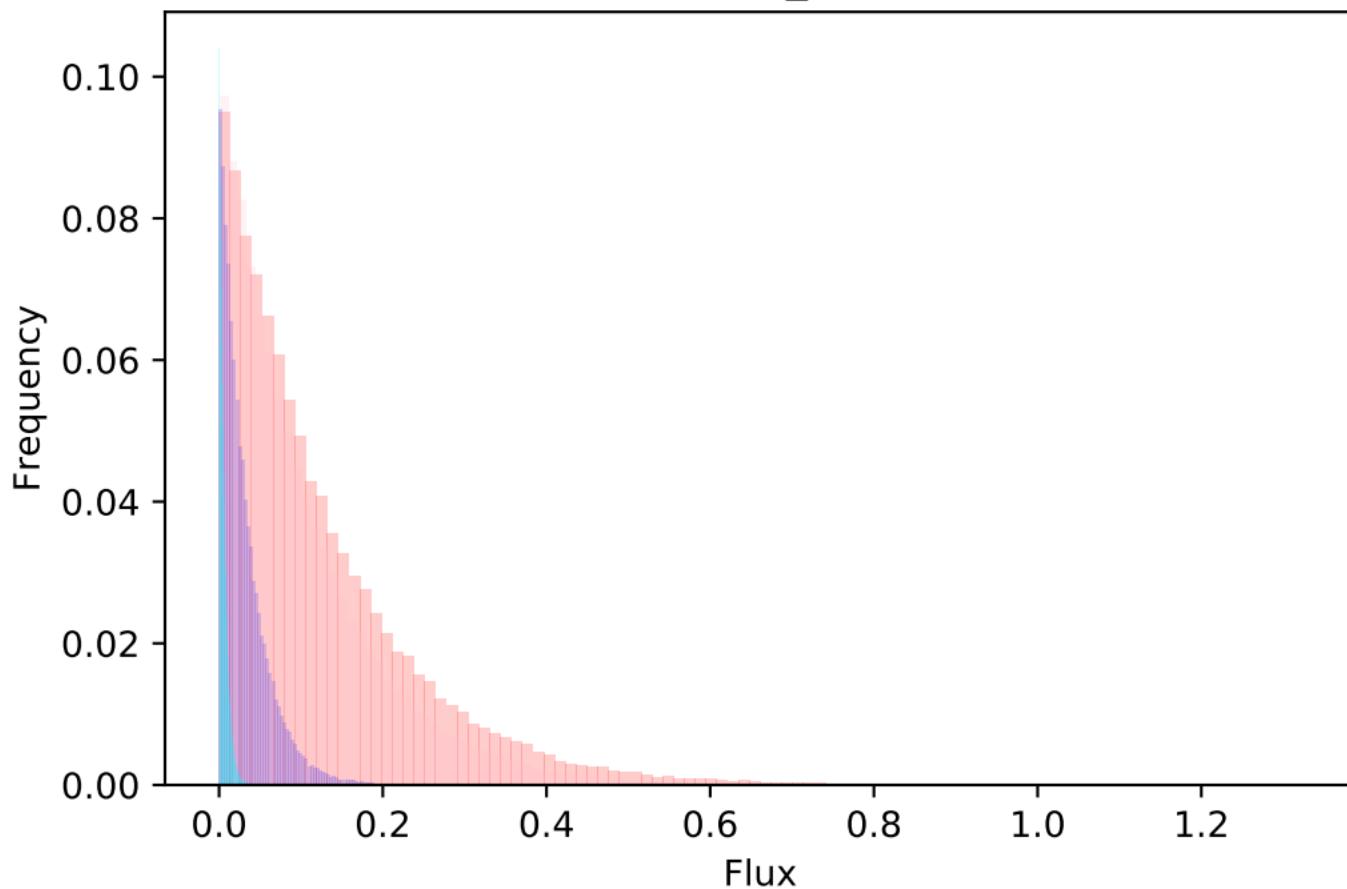
499 : Lys\_h -->



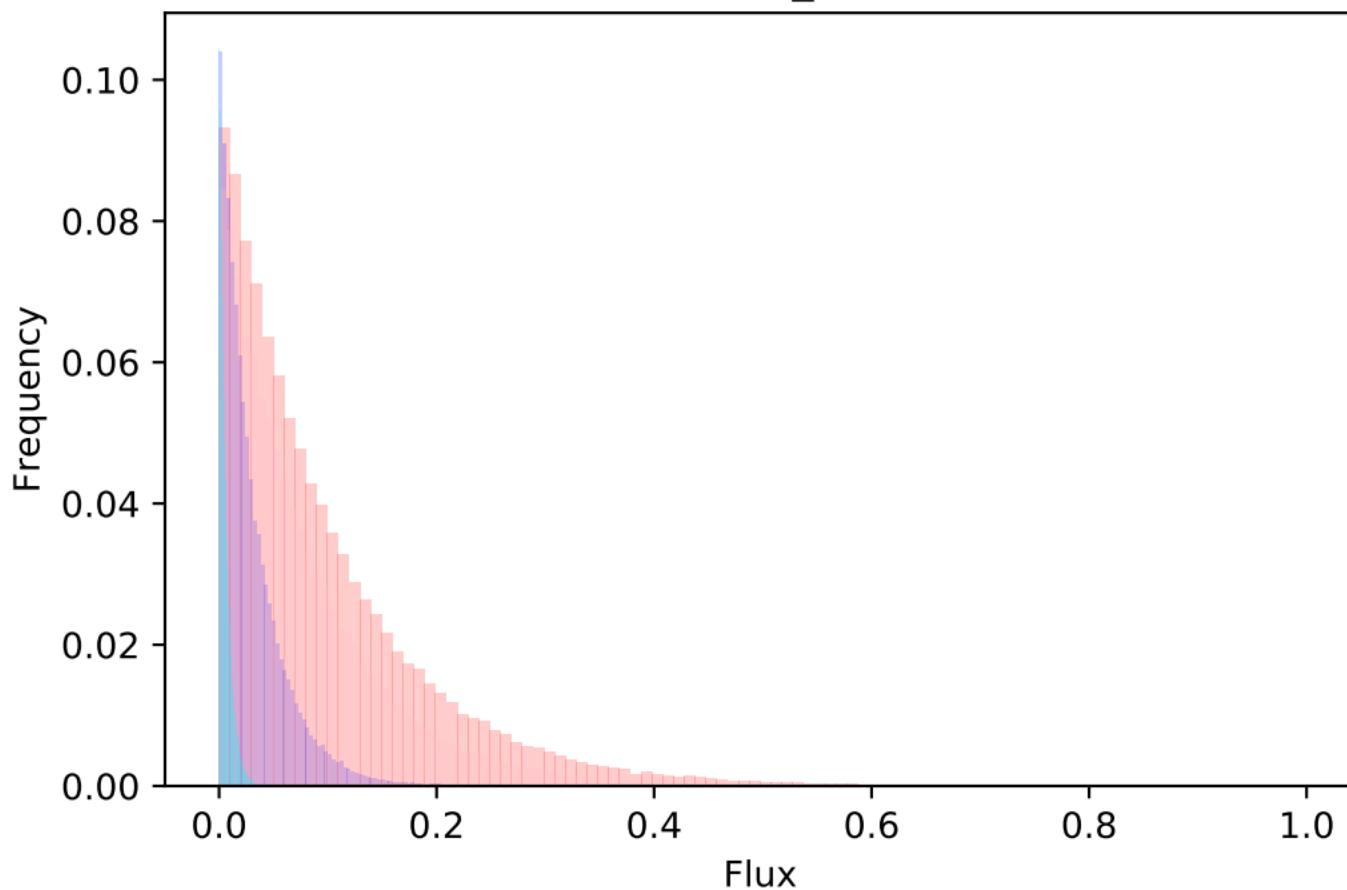
500 : Lys\_m -->



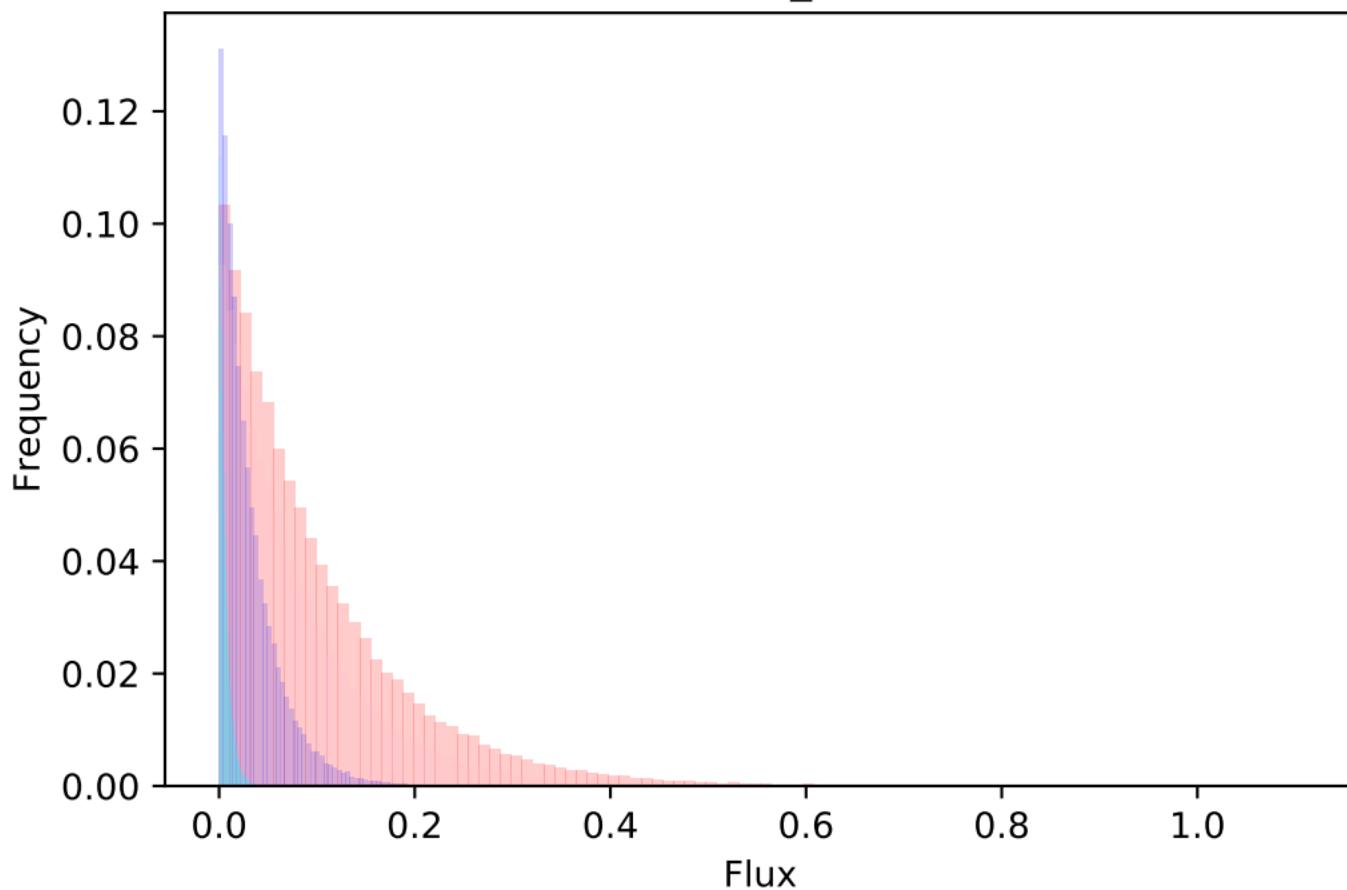
501 : Lys\_p -->



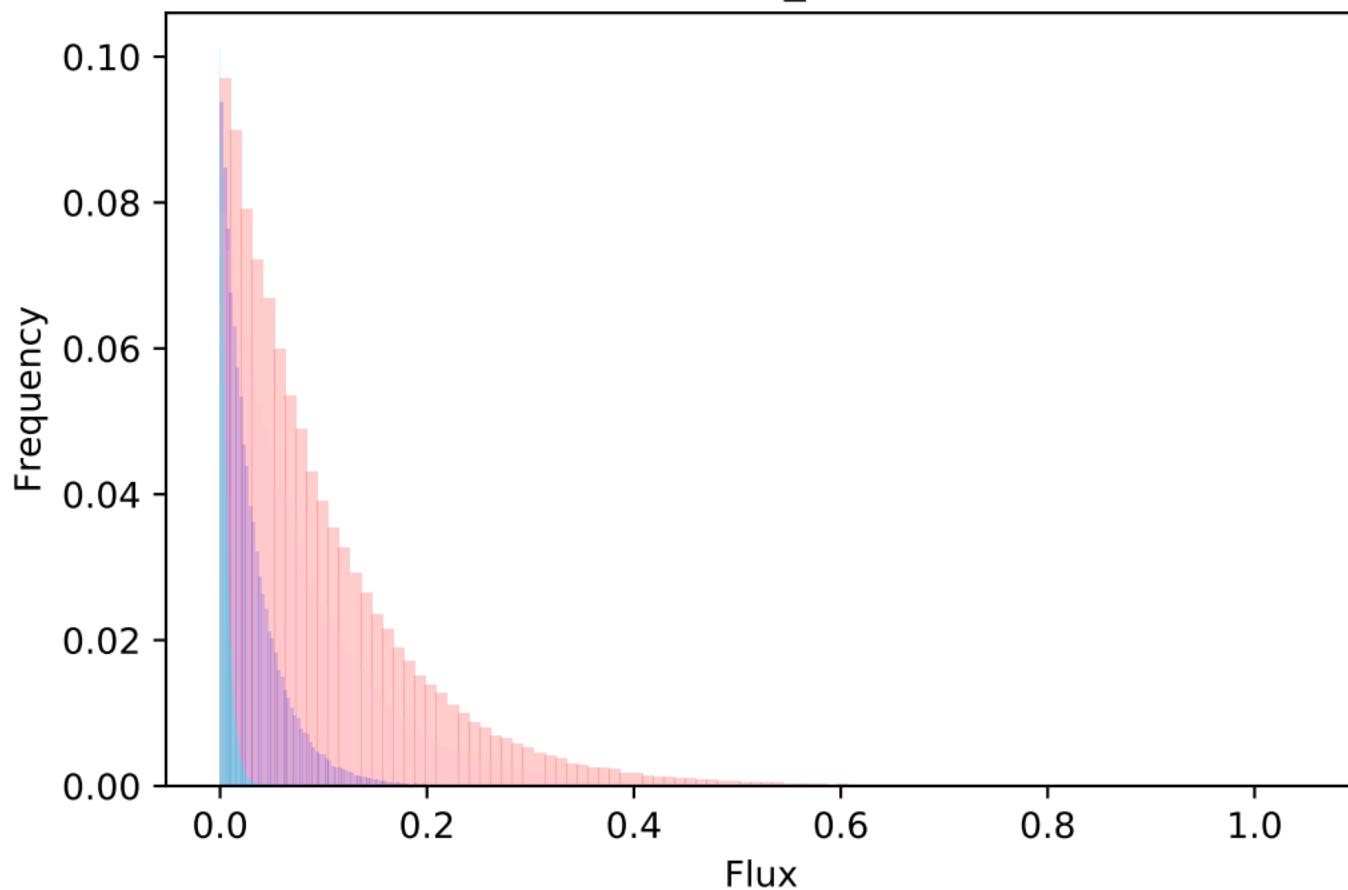
502 : Met\_c -->



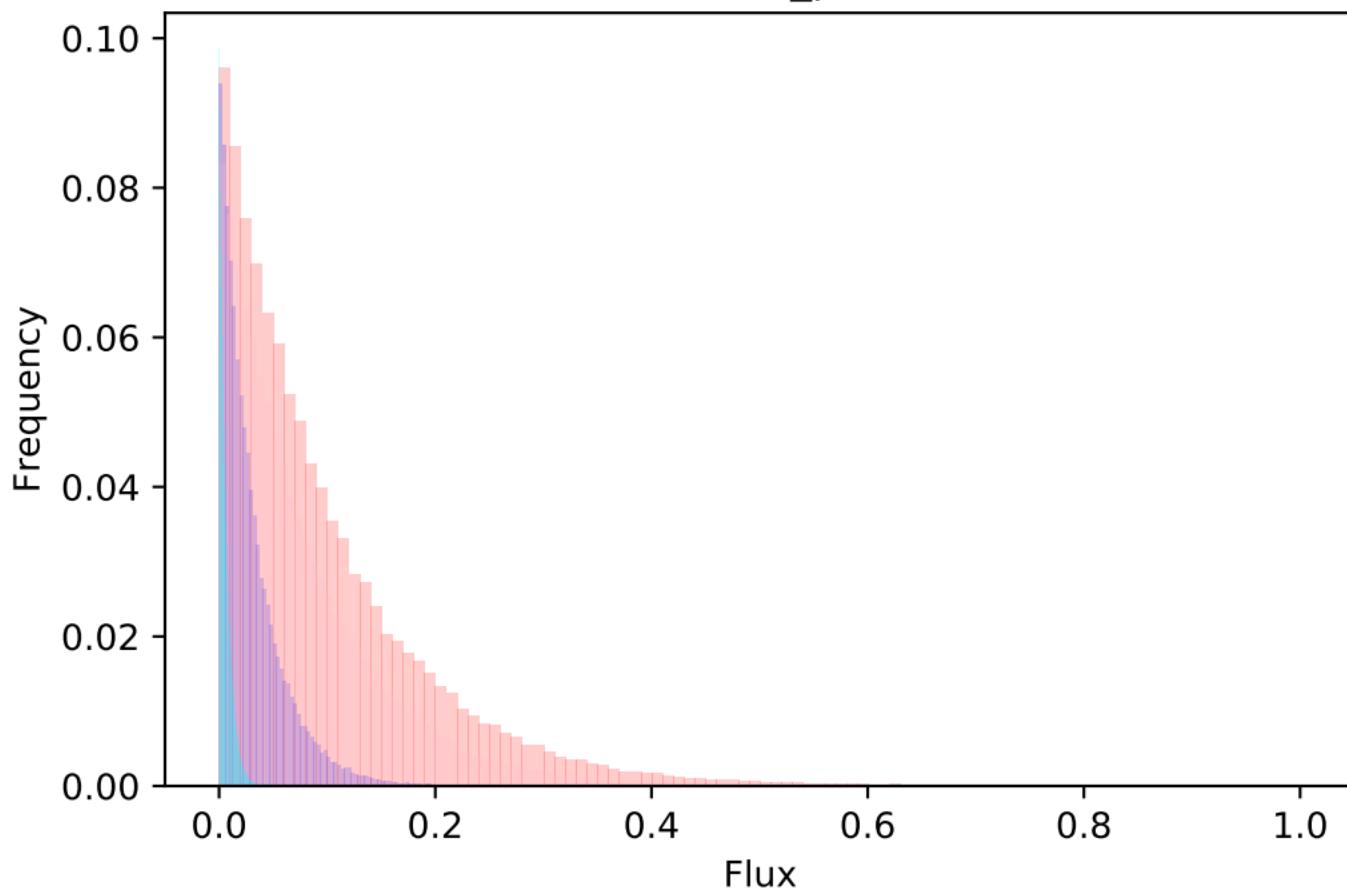
503 : Met\_h -->



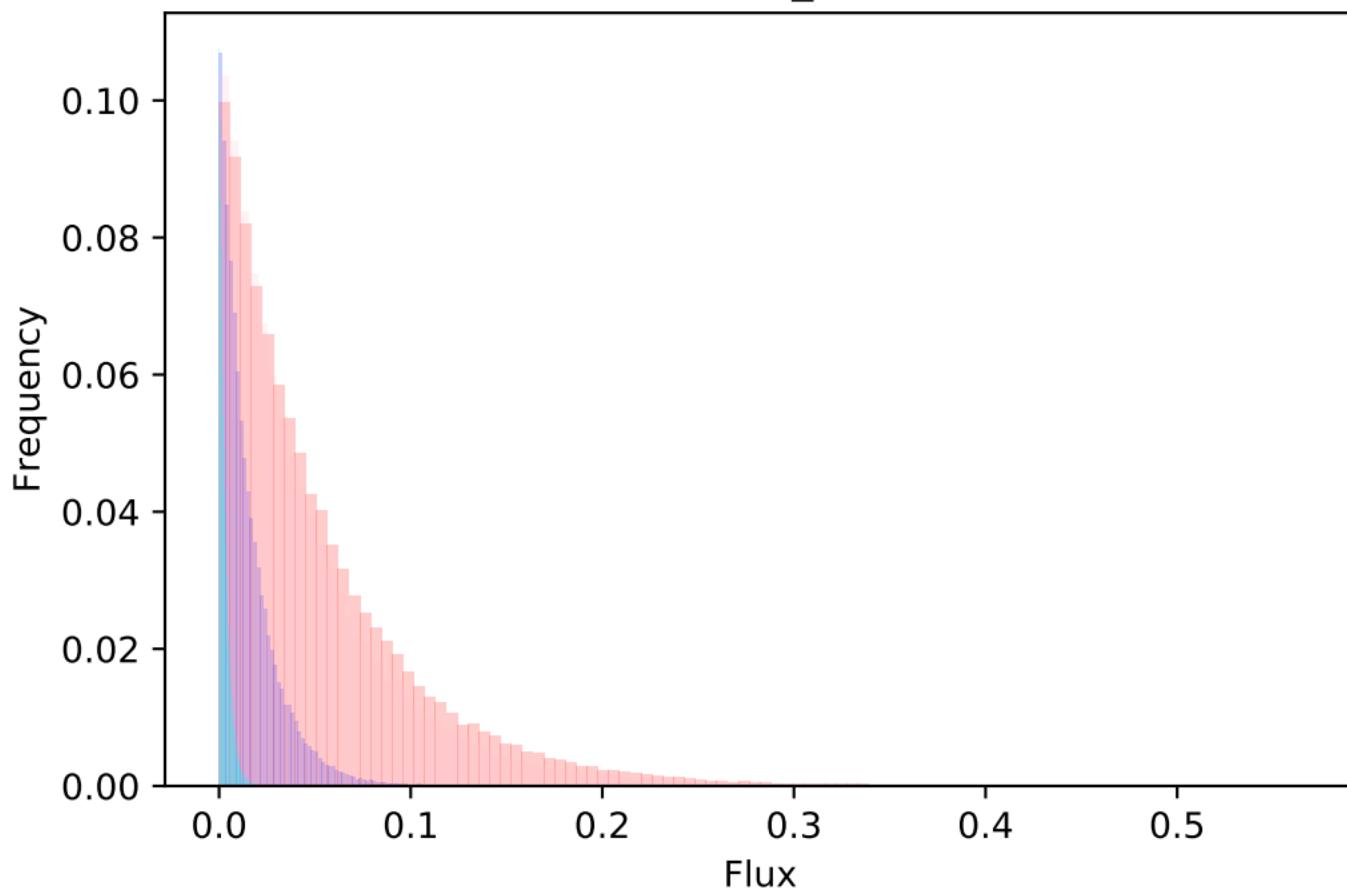
504 : Met\_m -->



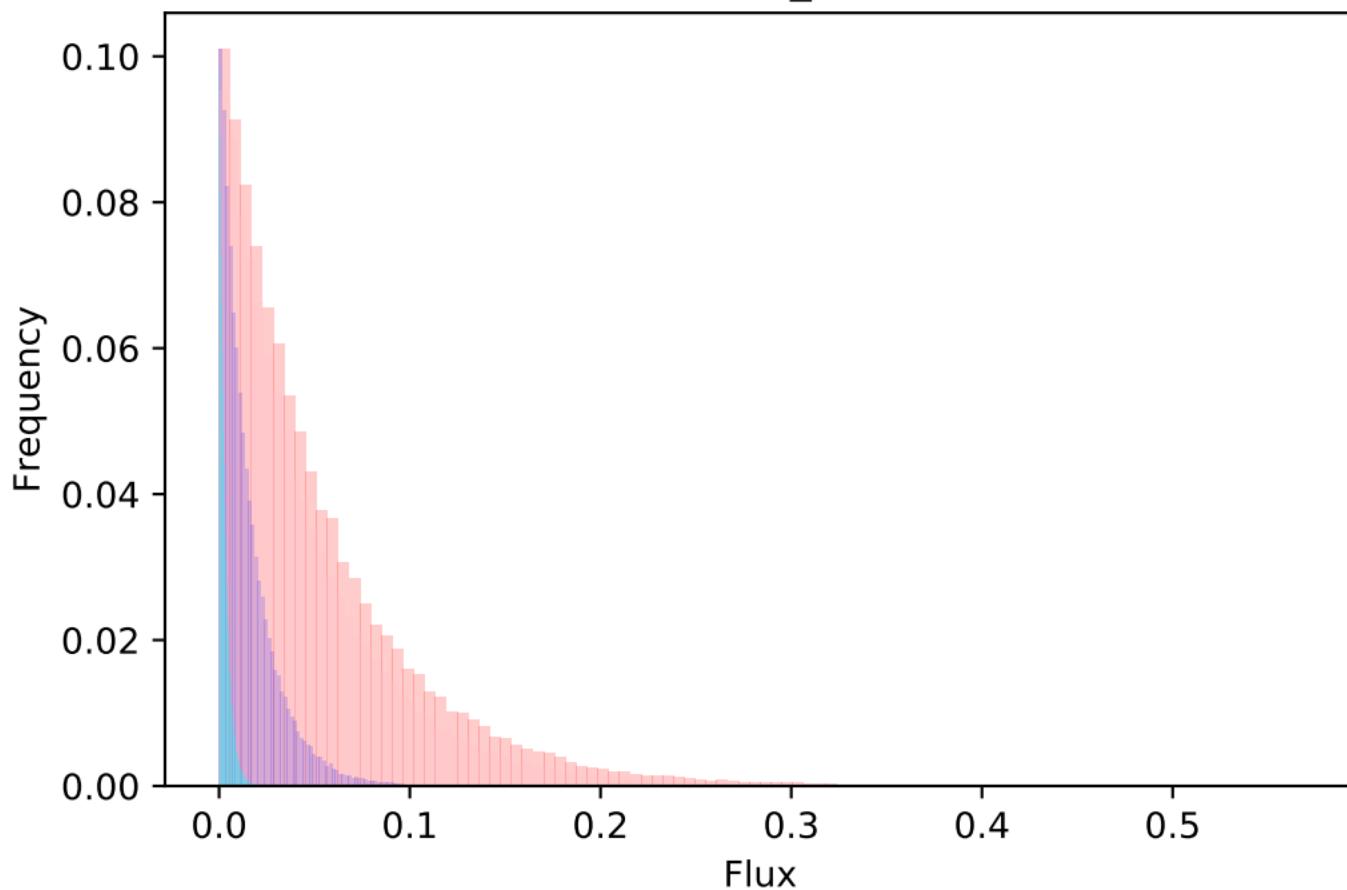
505 : Met\_p -->



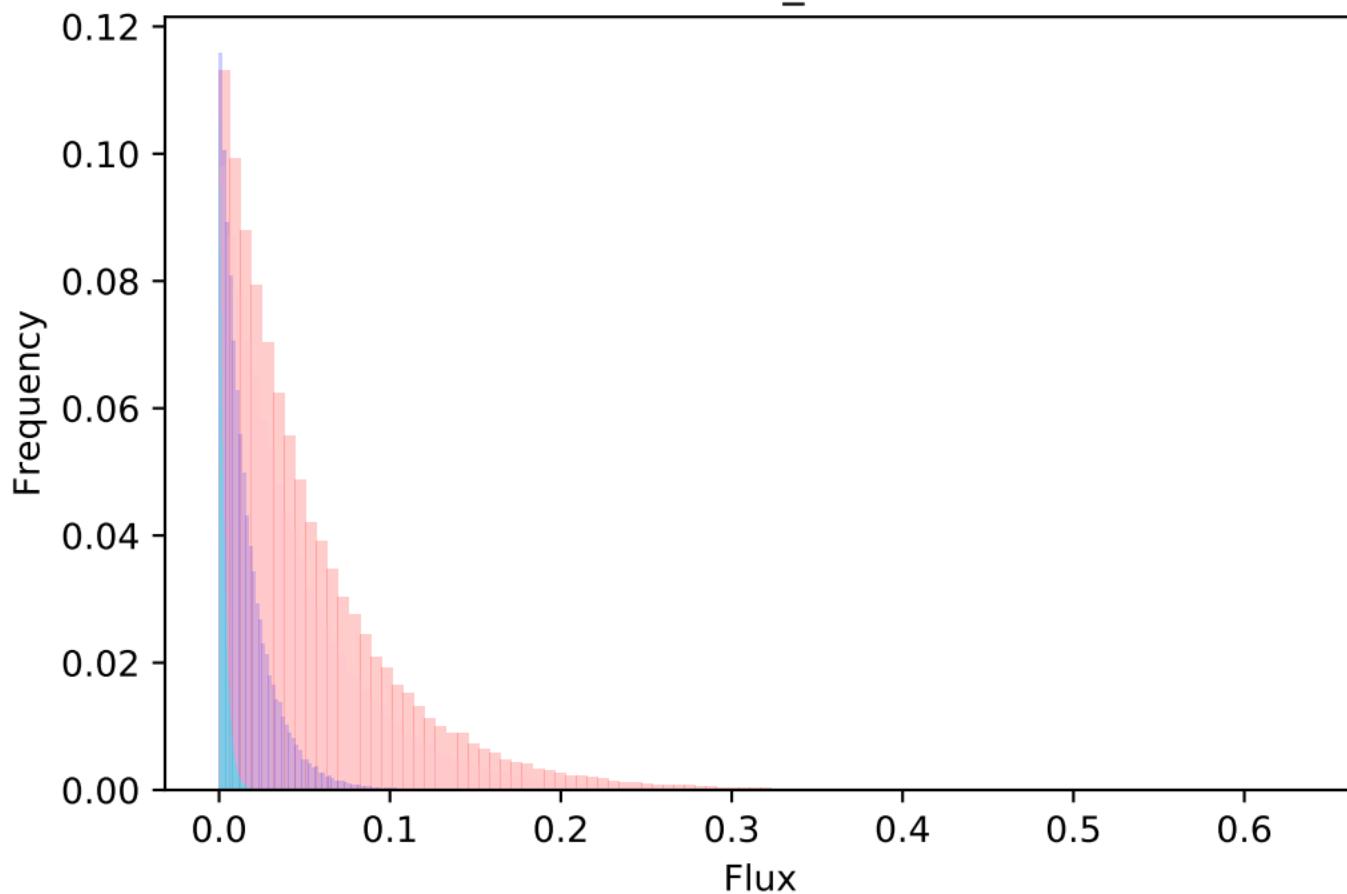
506 : Phe\_c -->



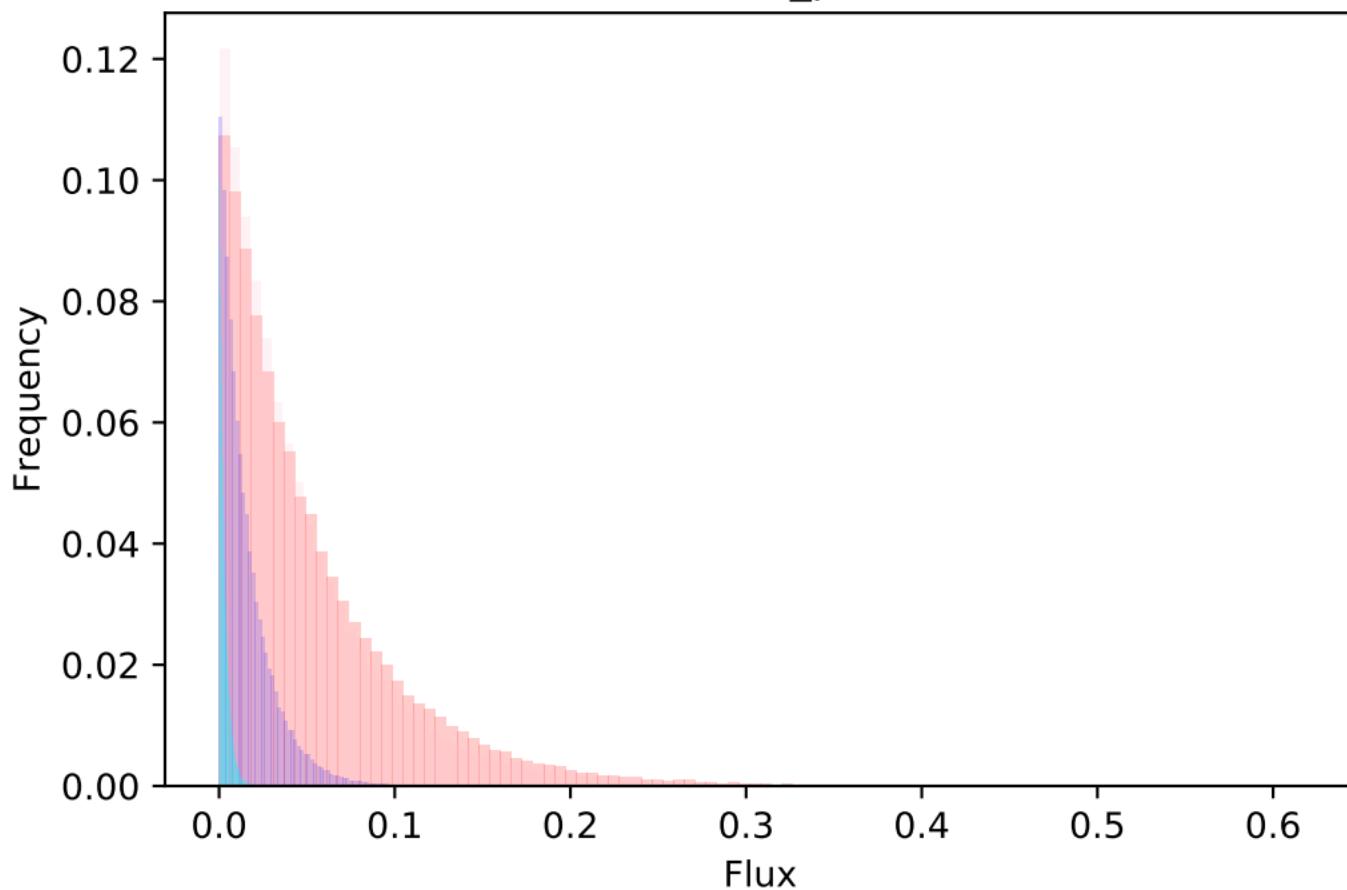
507 : Phe\_h -->



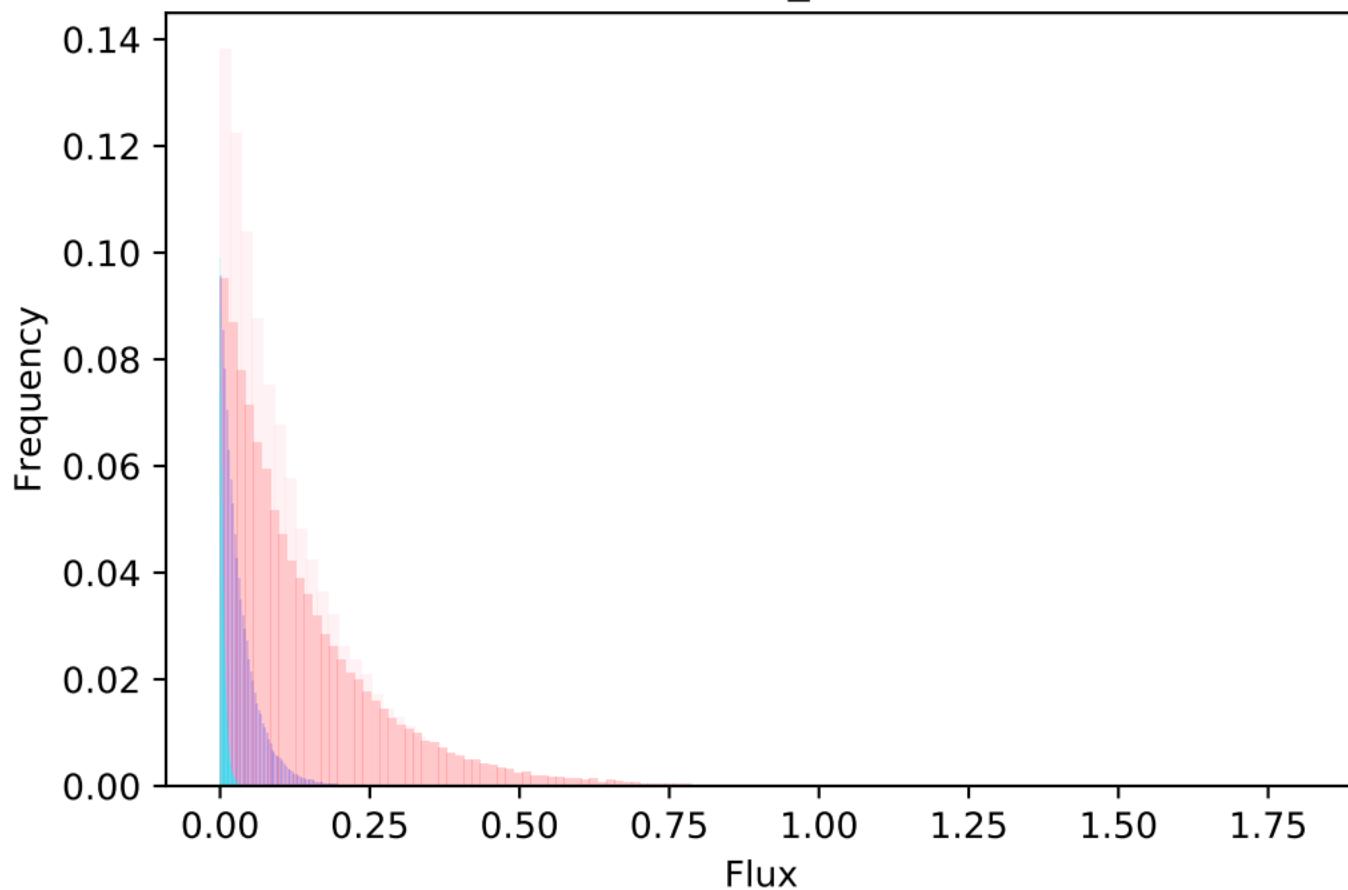
508 : Phe\_m -->



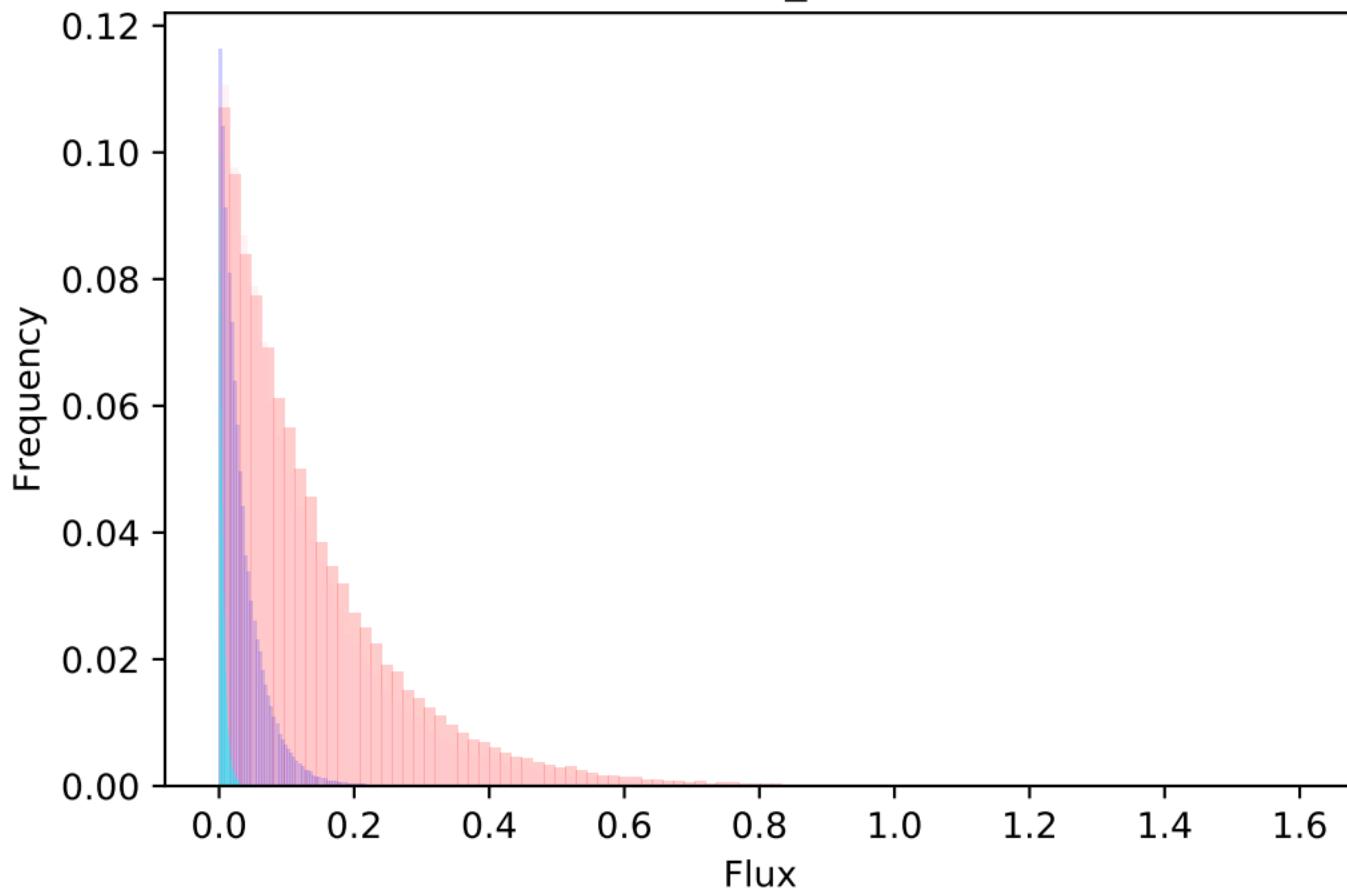
509 : Phe\_p -->



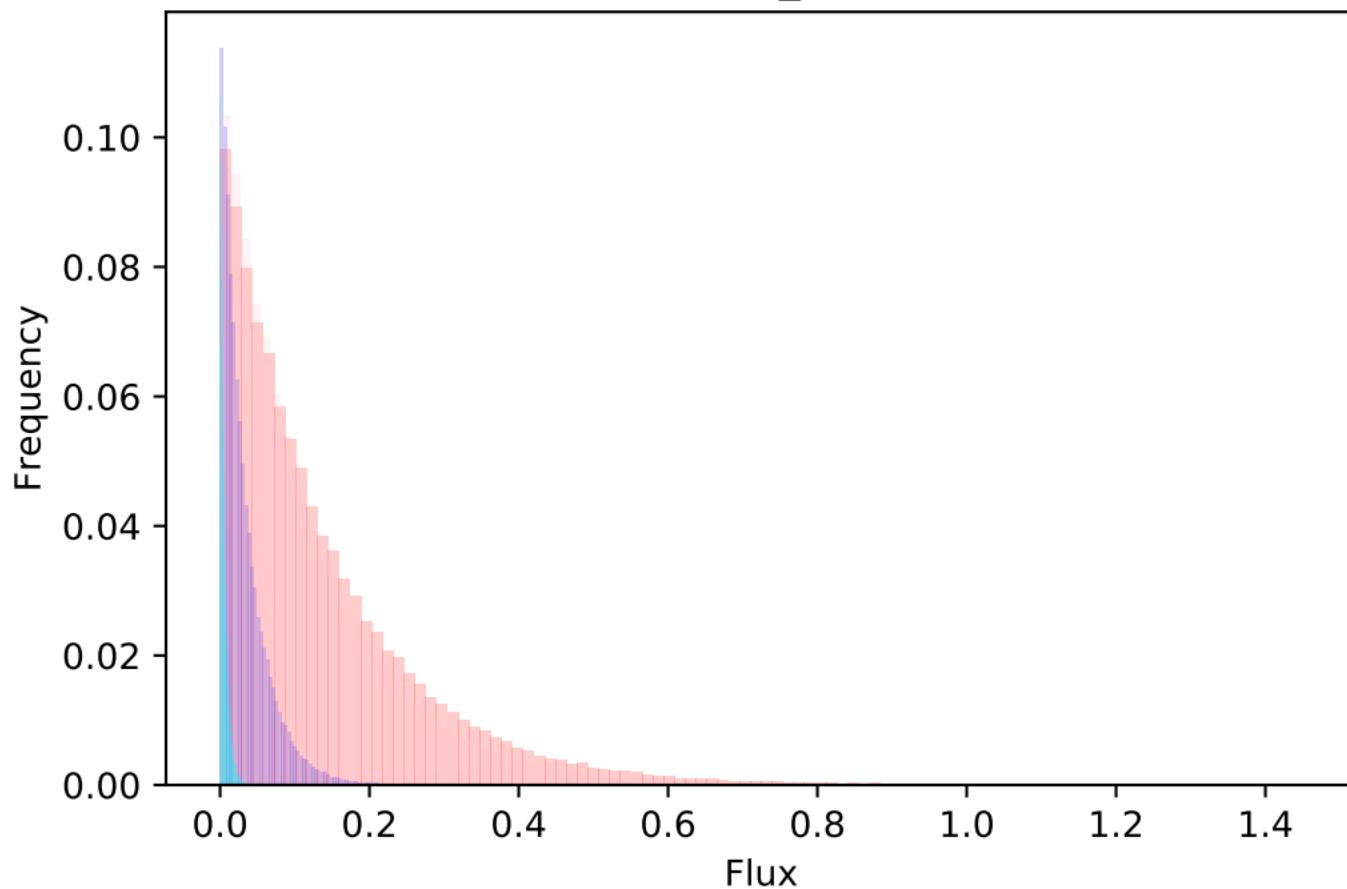
510 : Pro\_c -->



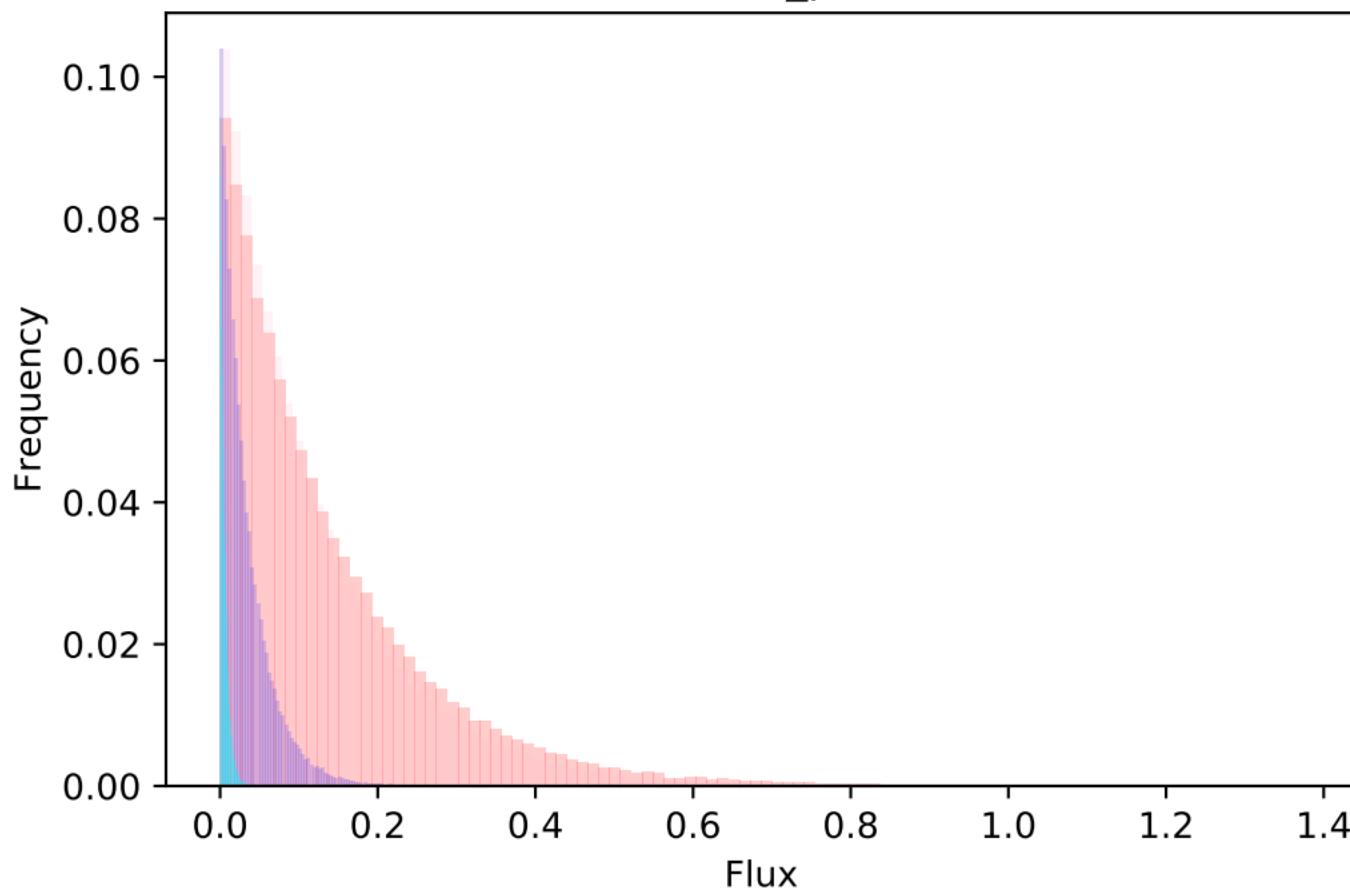
511 : Pro\_h -->



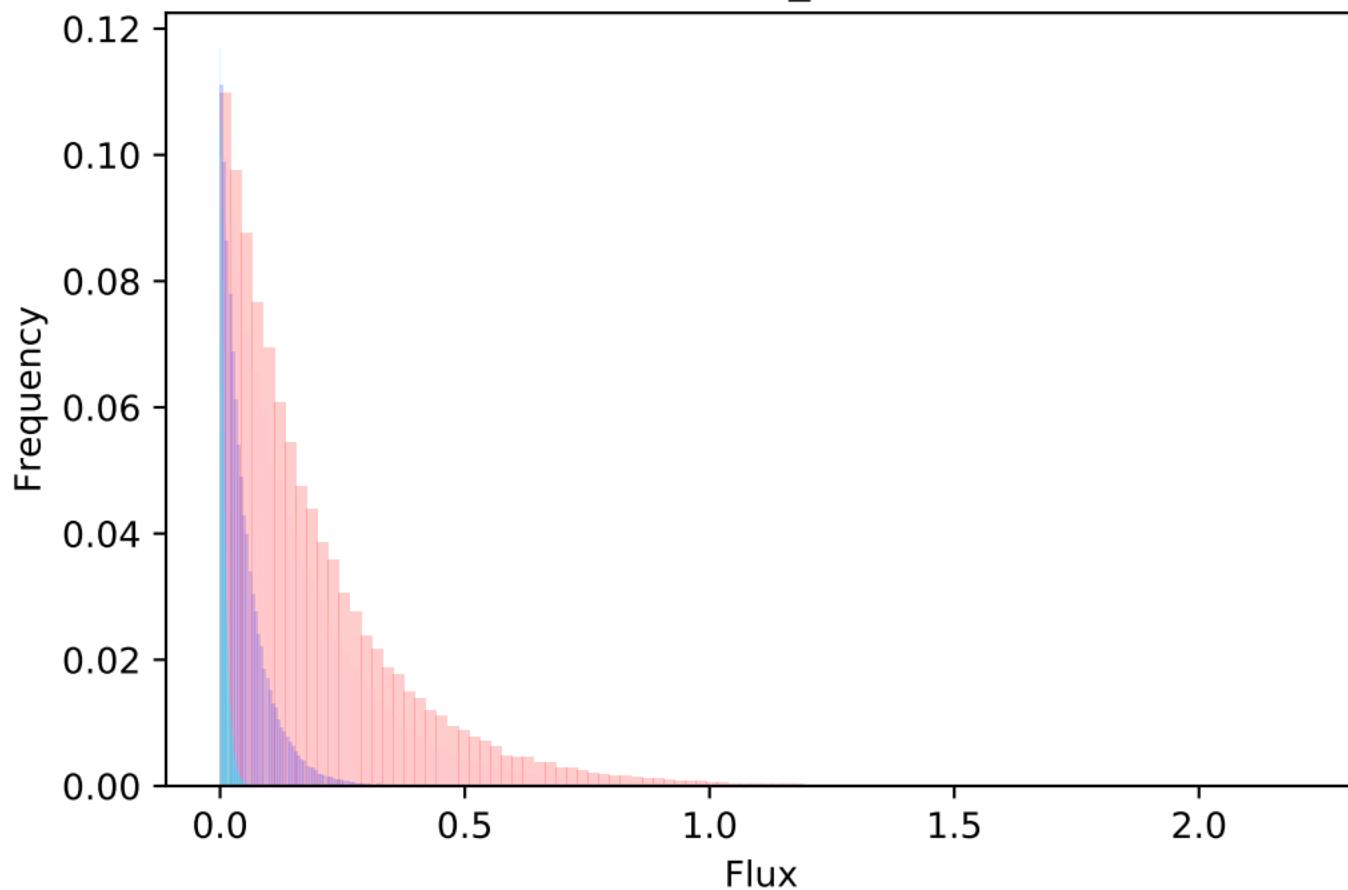
512 : Pro\_m -->



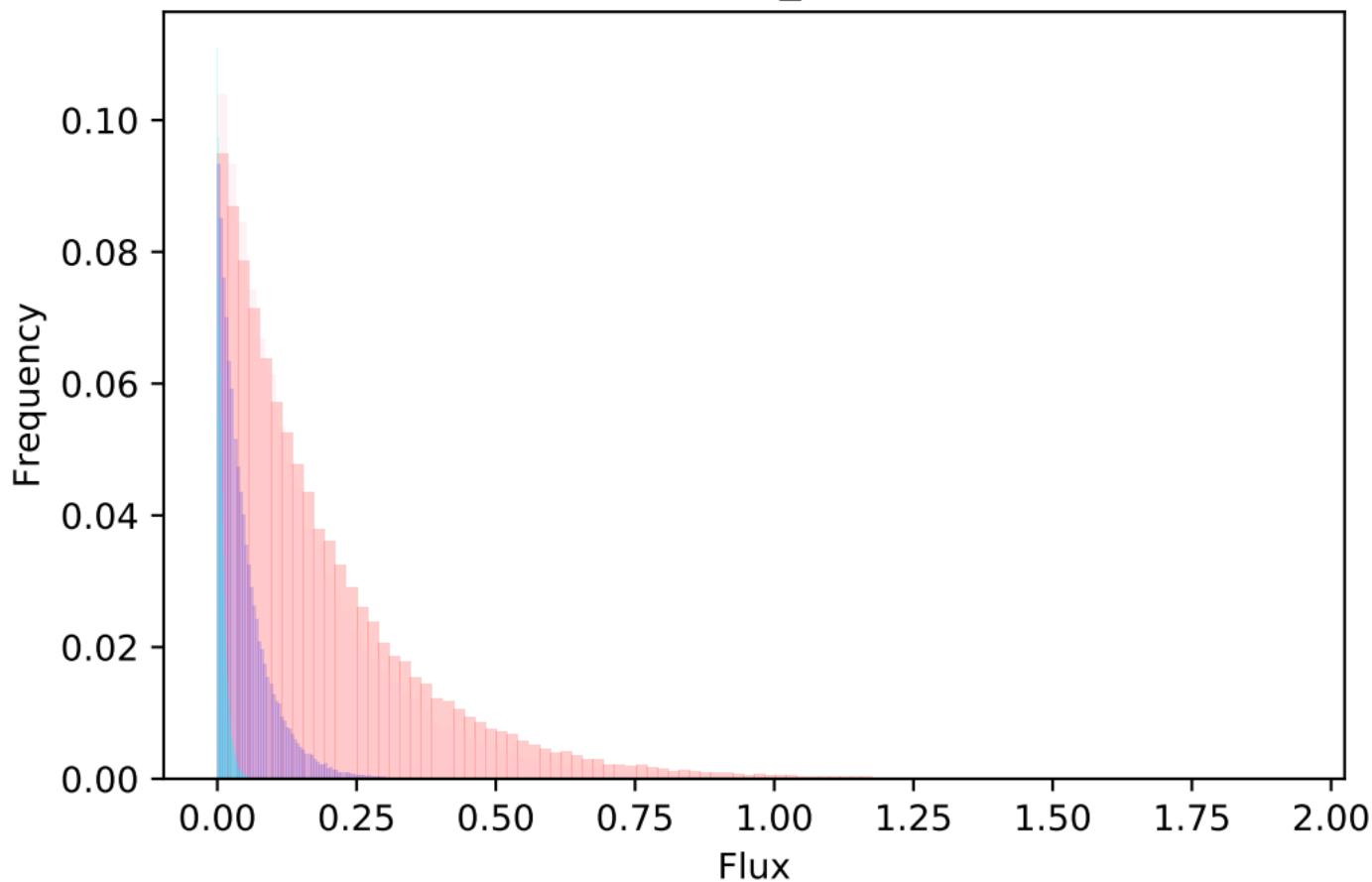
513 : Pro\_p -->



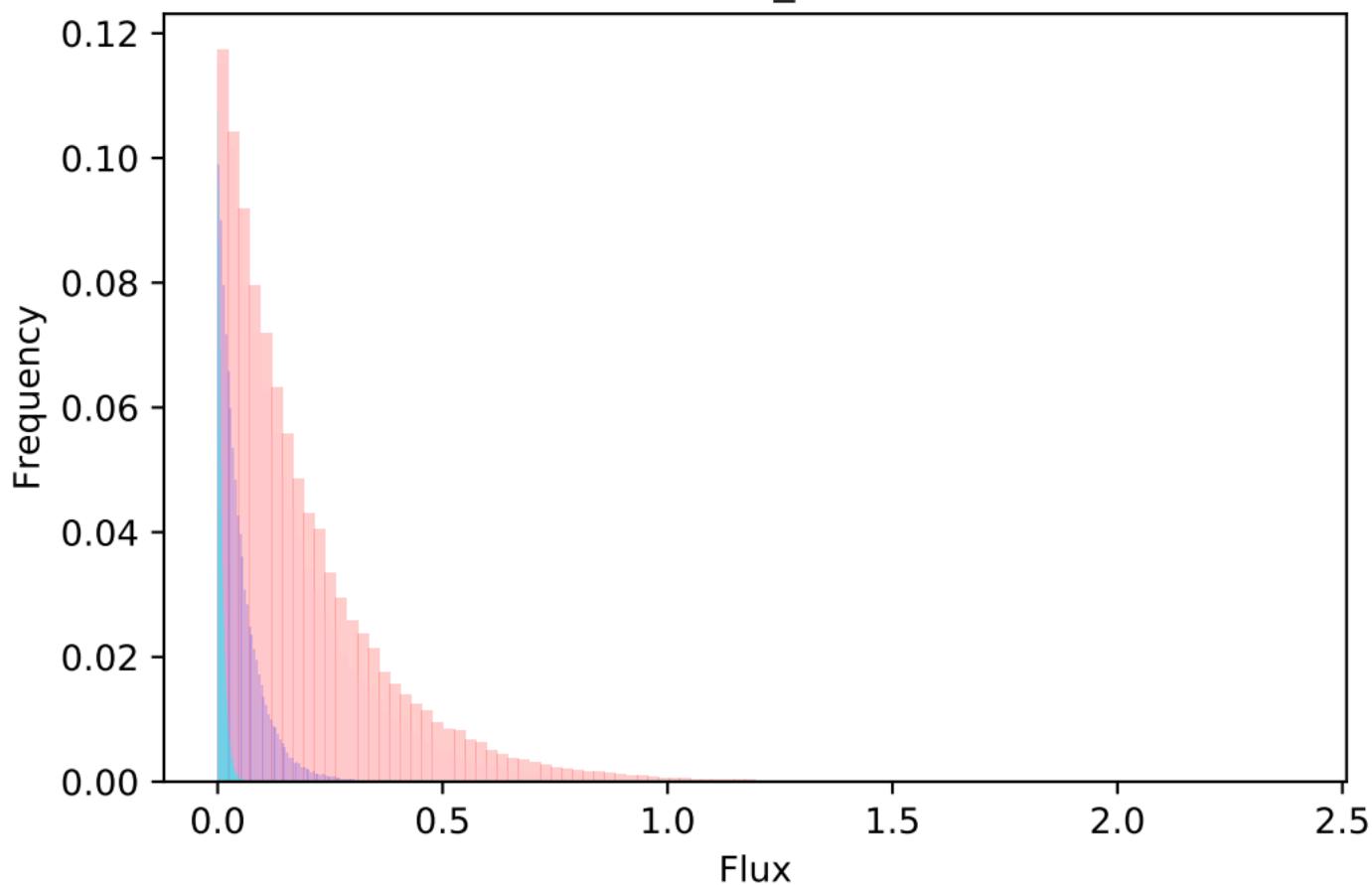
514 : Ser\_c -->



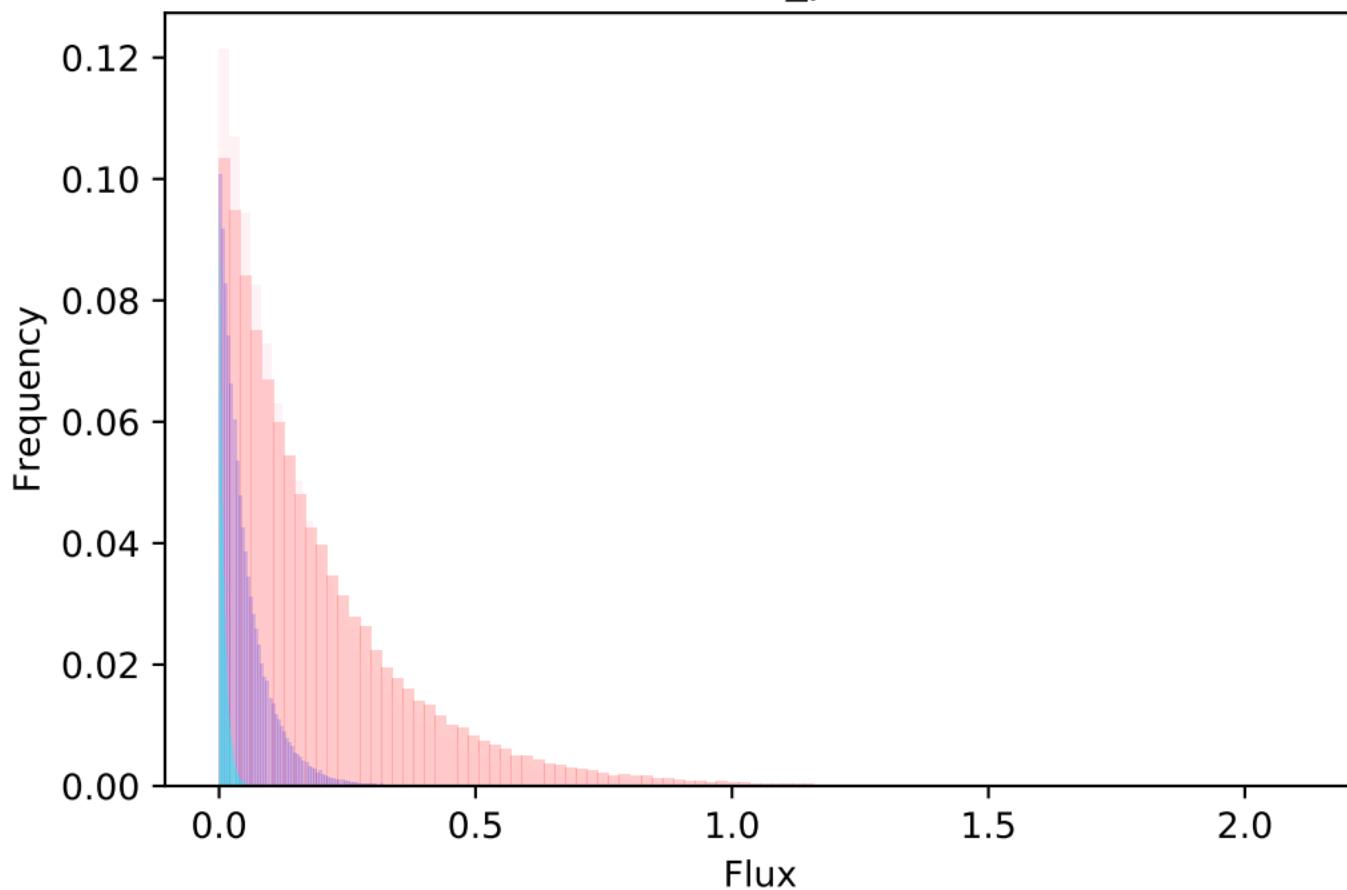
515 : Ser\_h -->



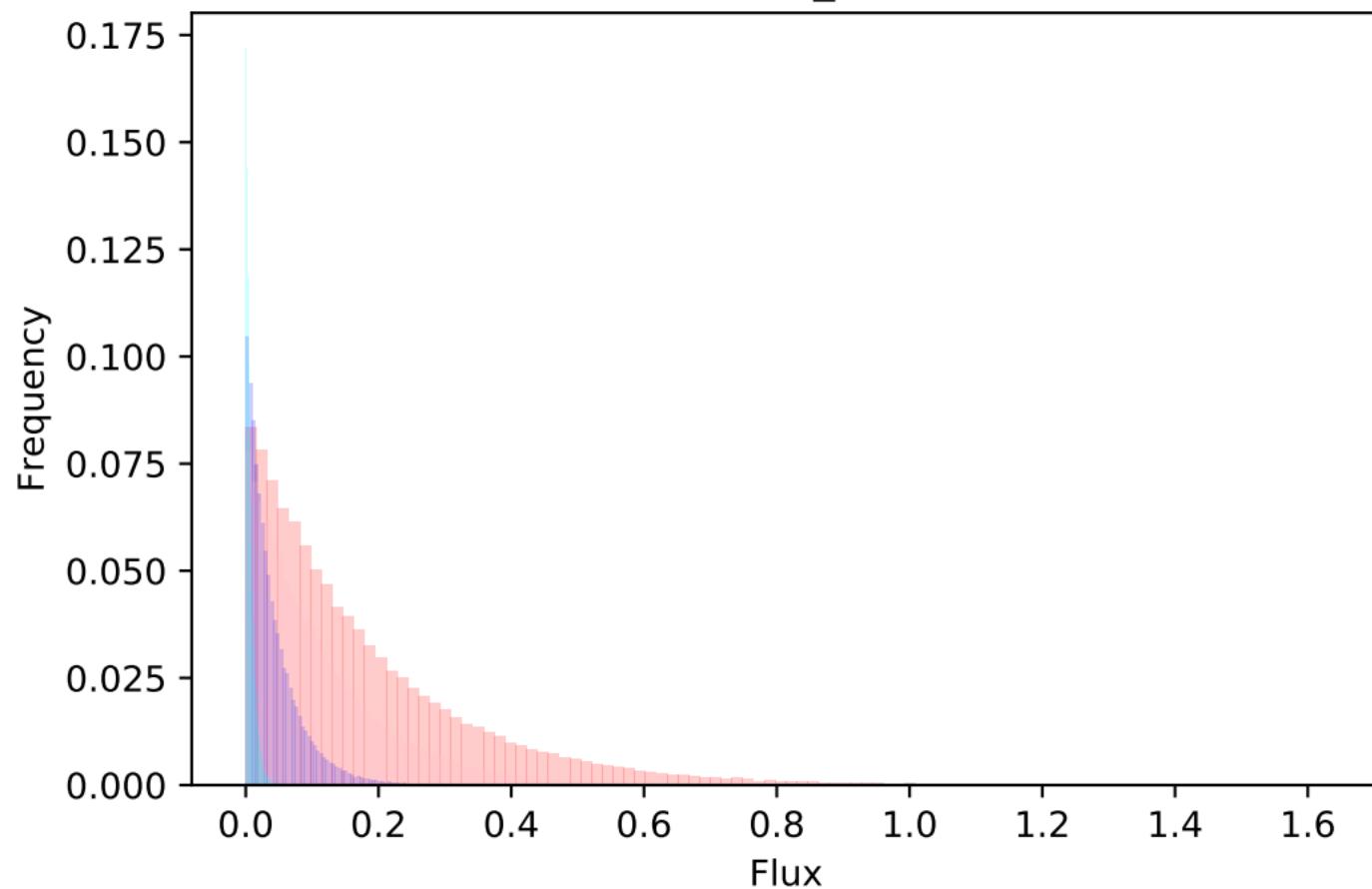
516 : Ser\_m -->



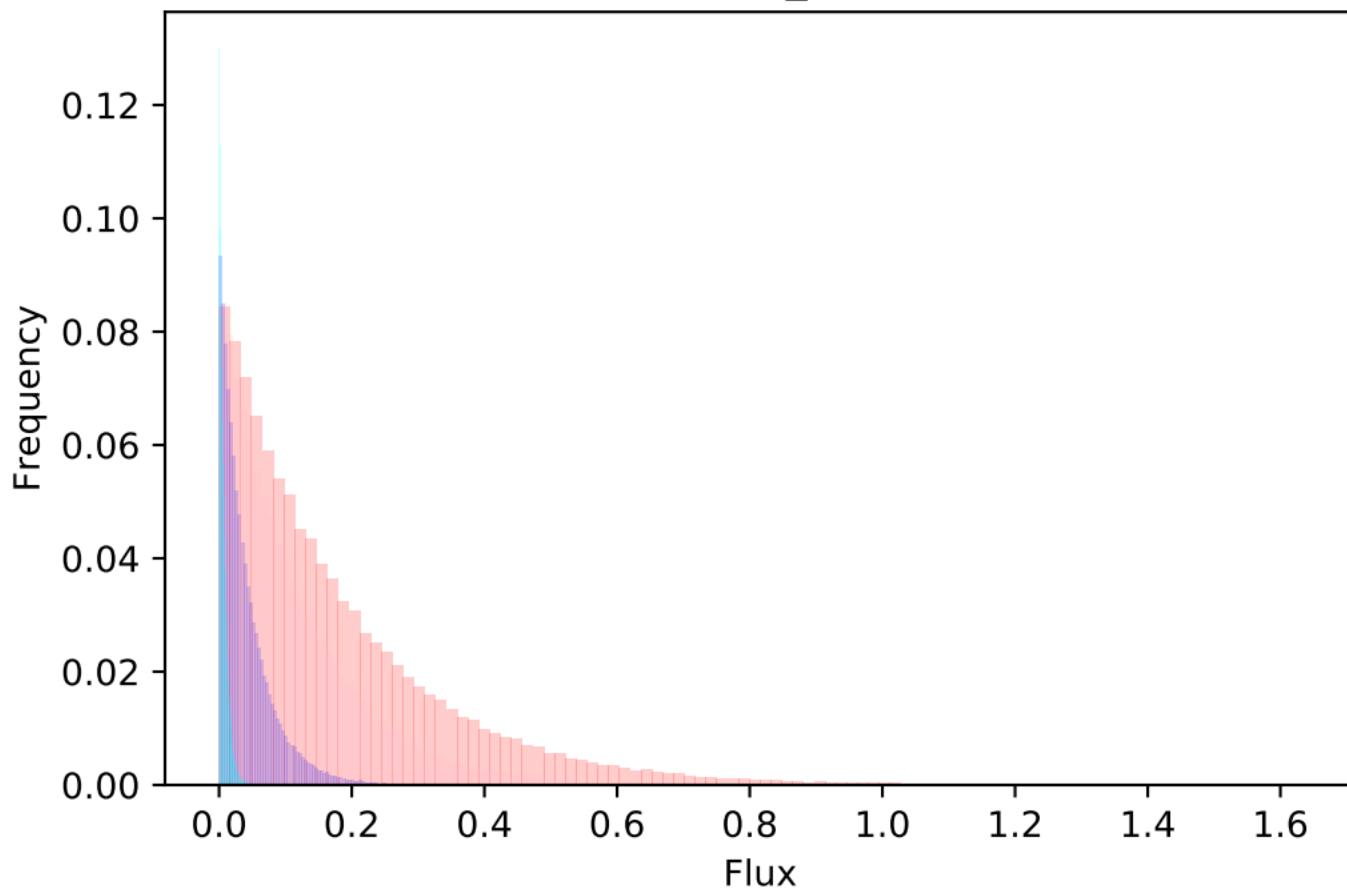
517 : Ser\_p -->



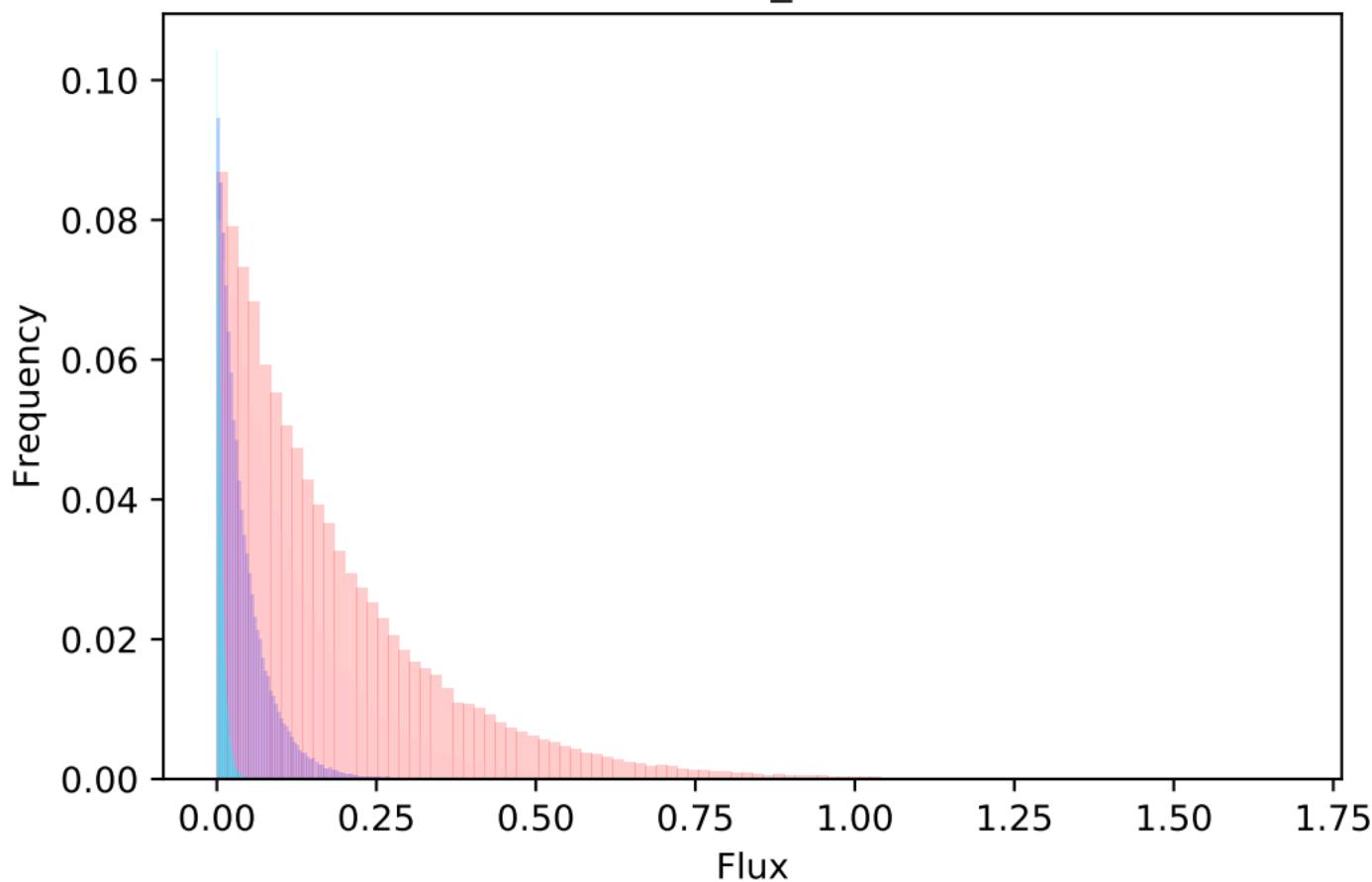
518 : Thr\_c -->



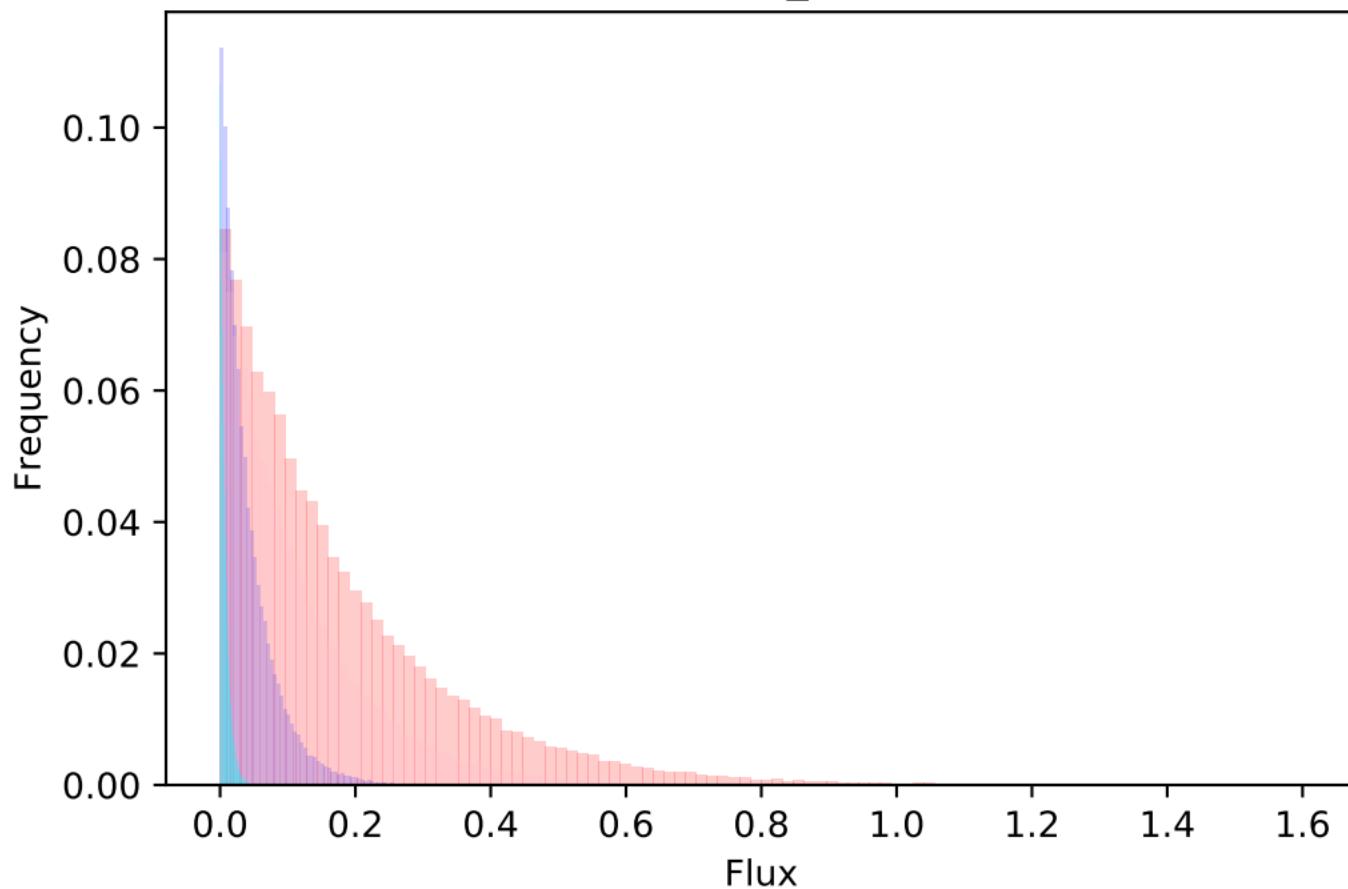
519 : Thr\_h -->



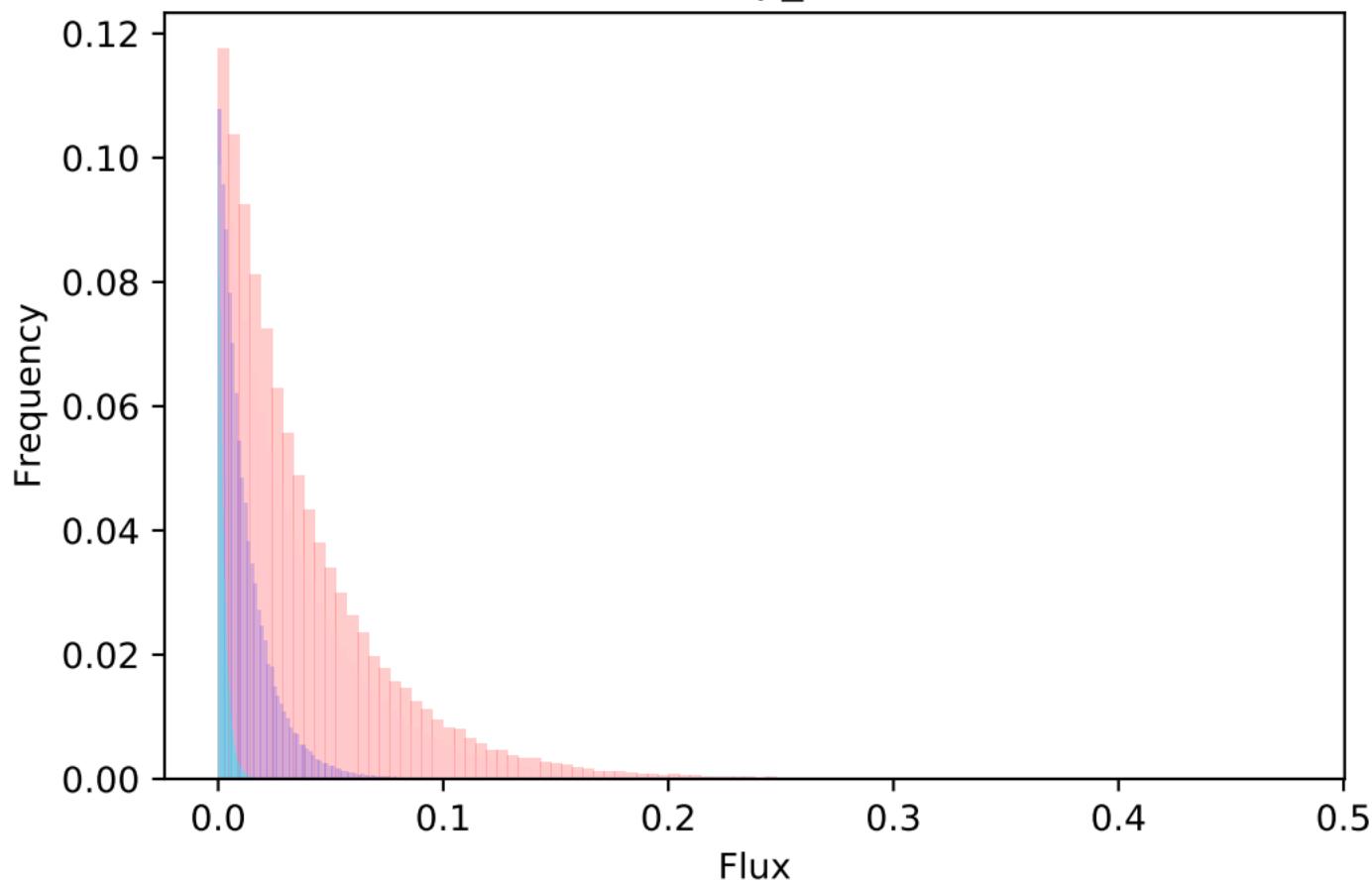
520 : Thr\_m -->



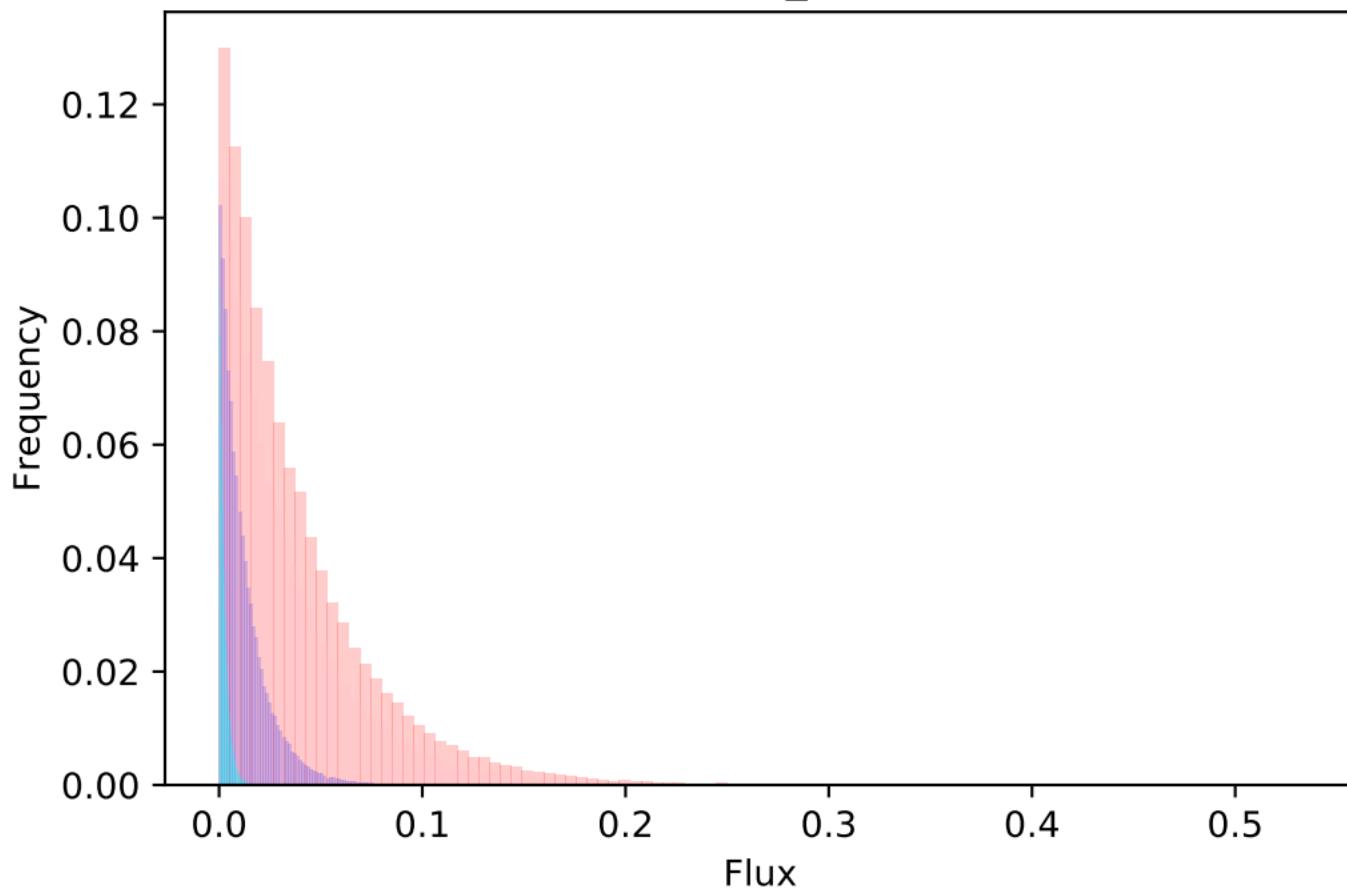
521 : Thr\_p -->



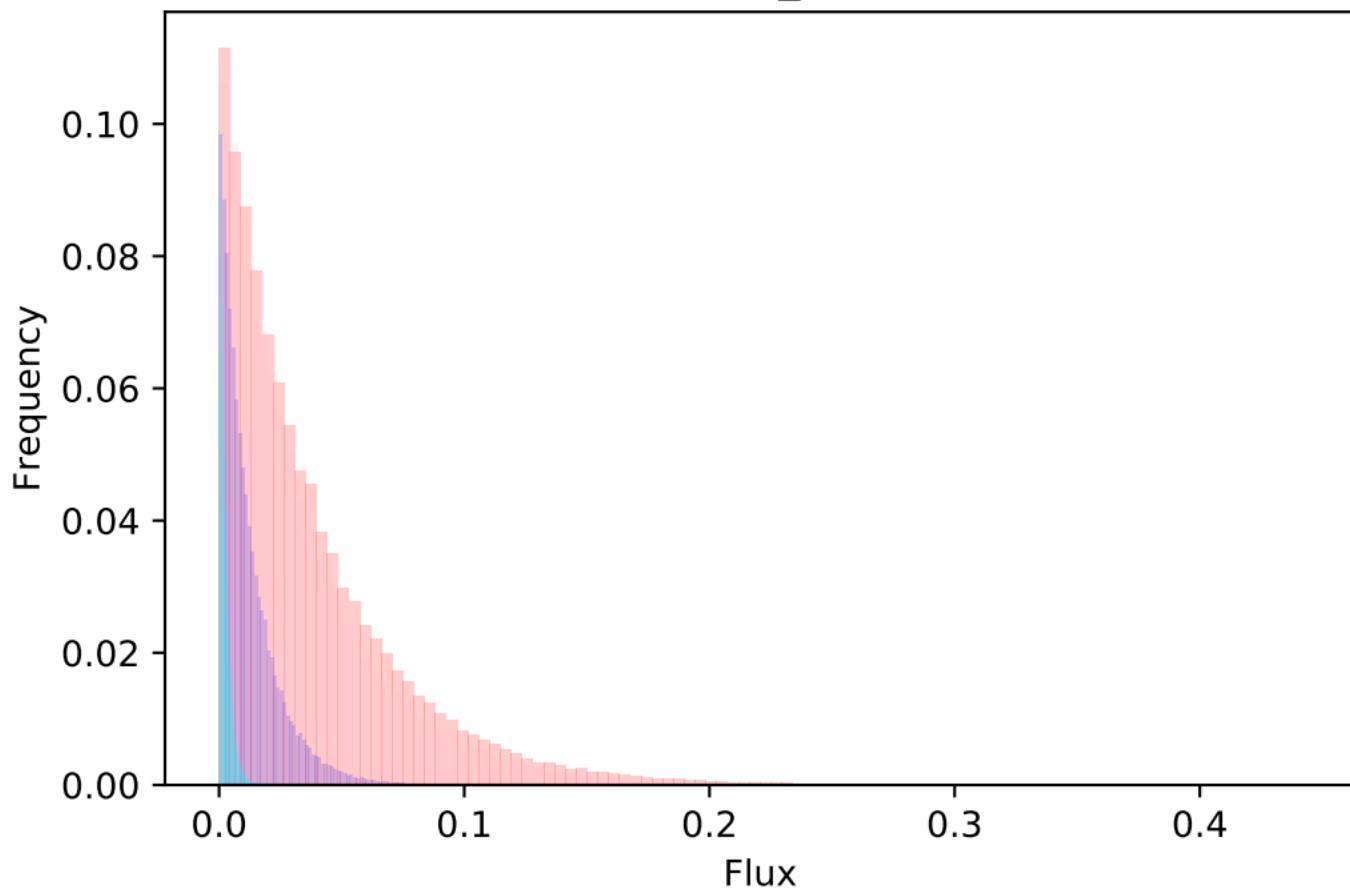
522 : Trp\_c -->



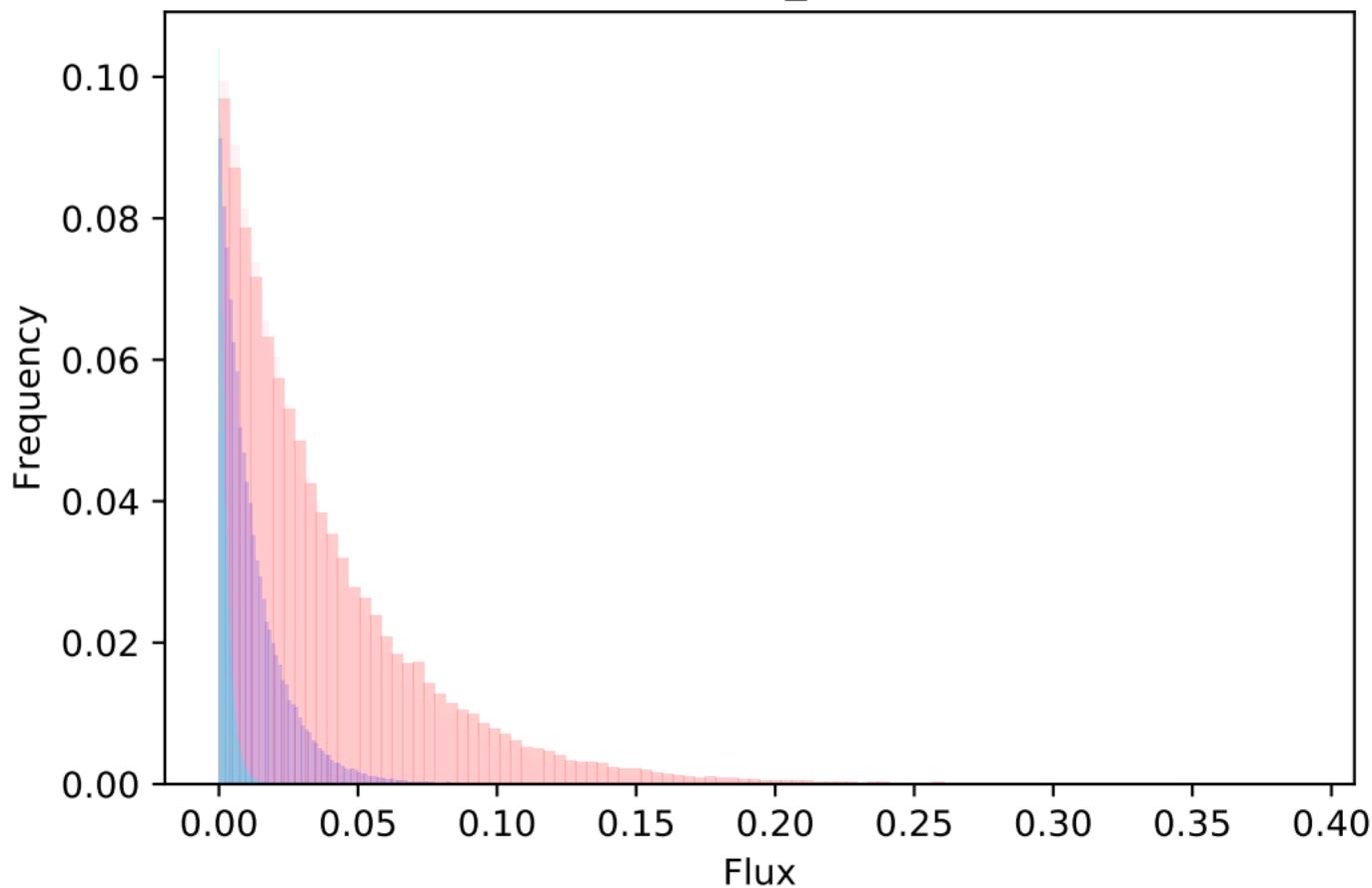
523 : Trp\_h -->



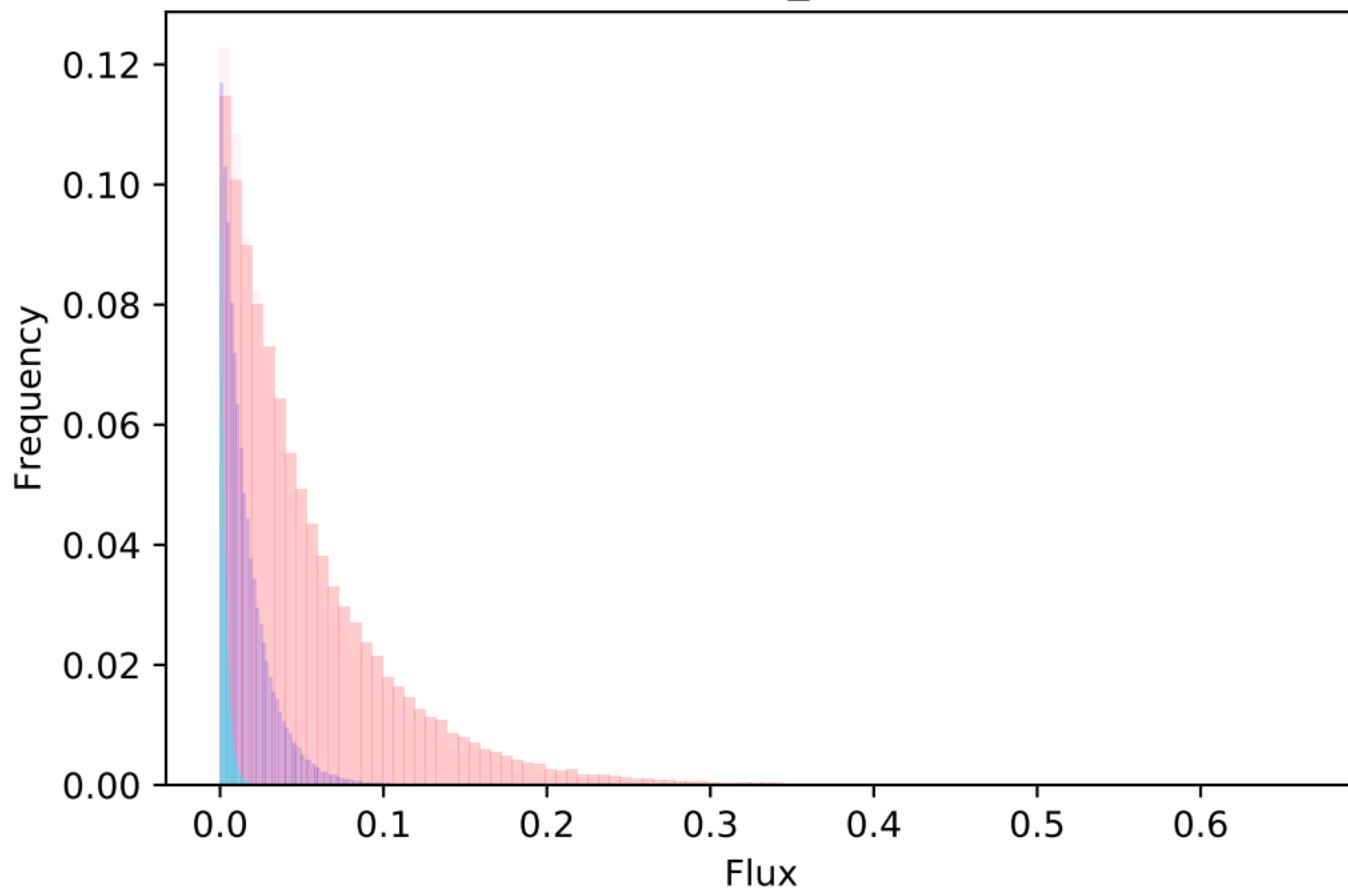
524 : Trp\_m -->



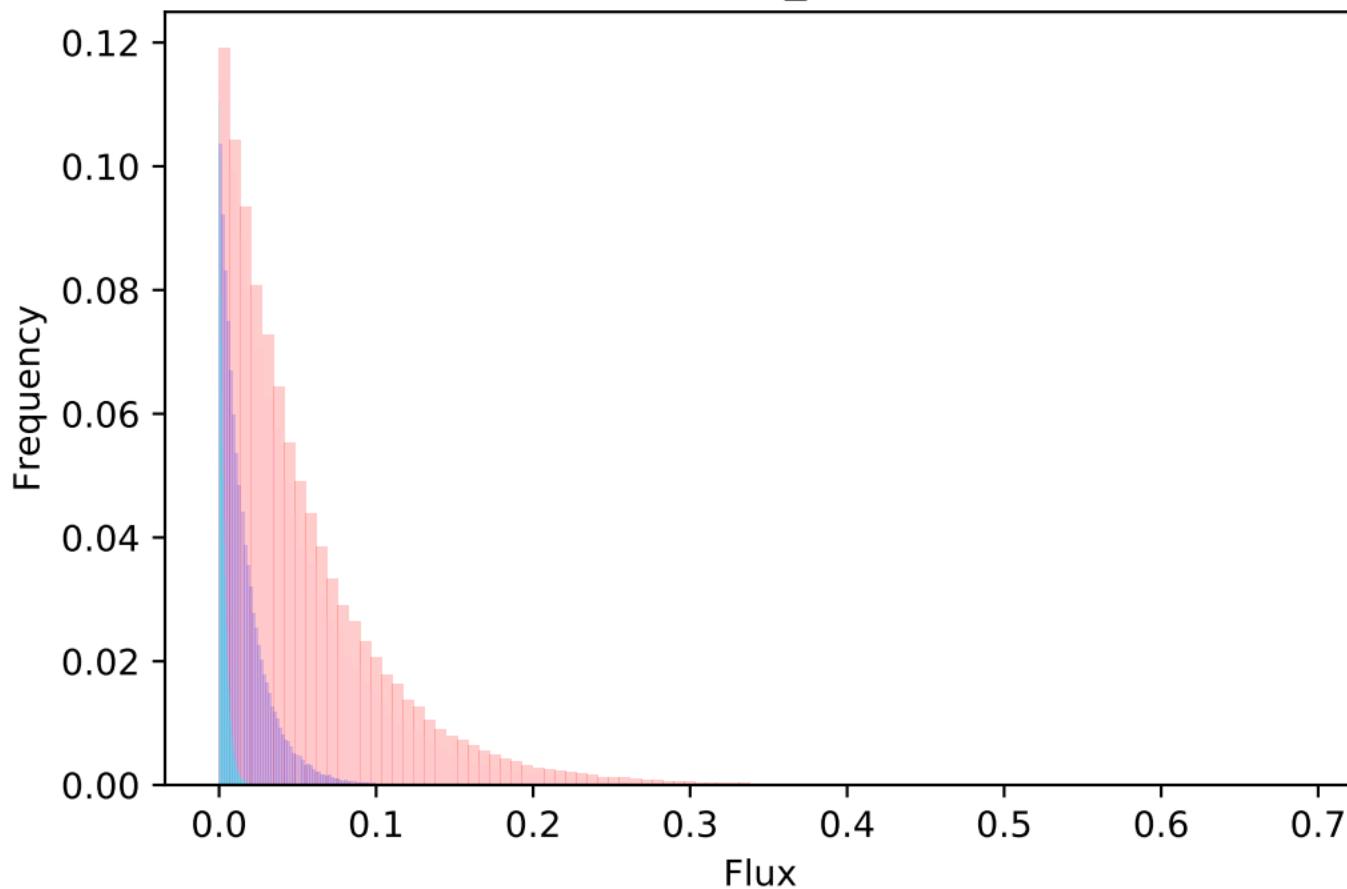
525 : Trp\_p -->



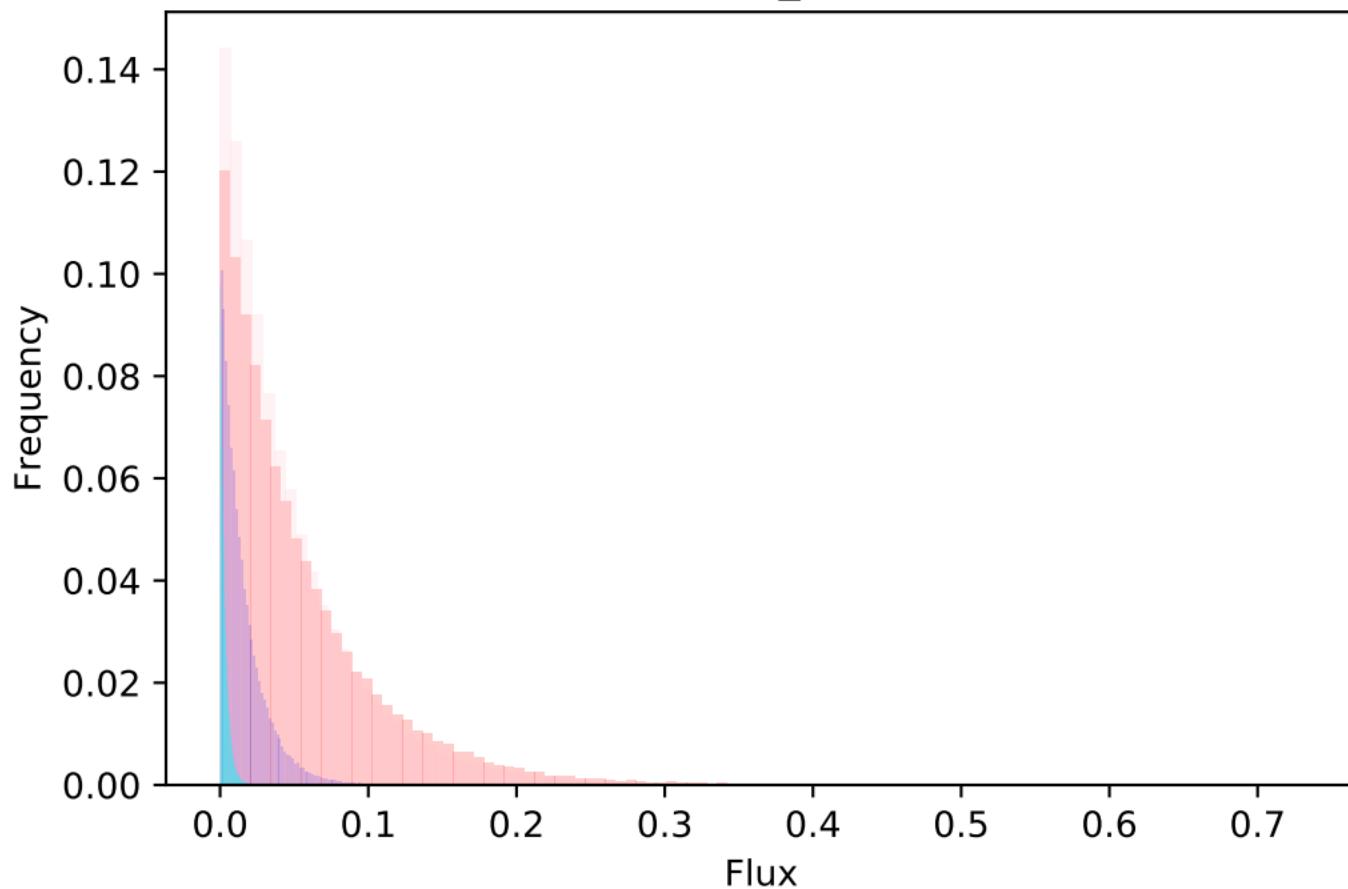
526 : Tyr\_c -->



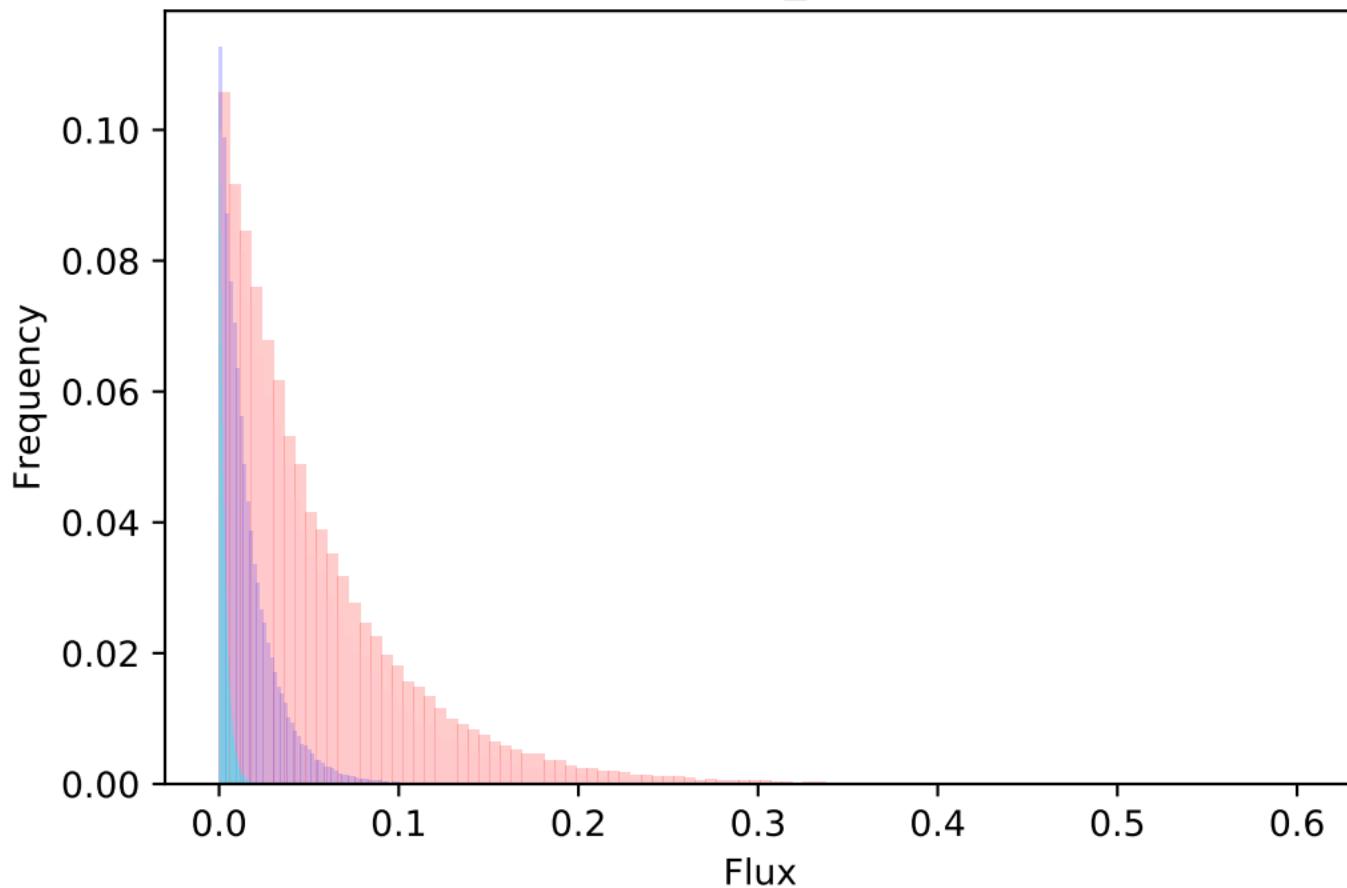
527 : Tyr\_h -->



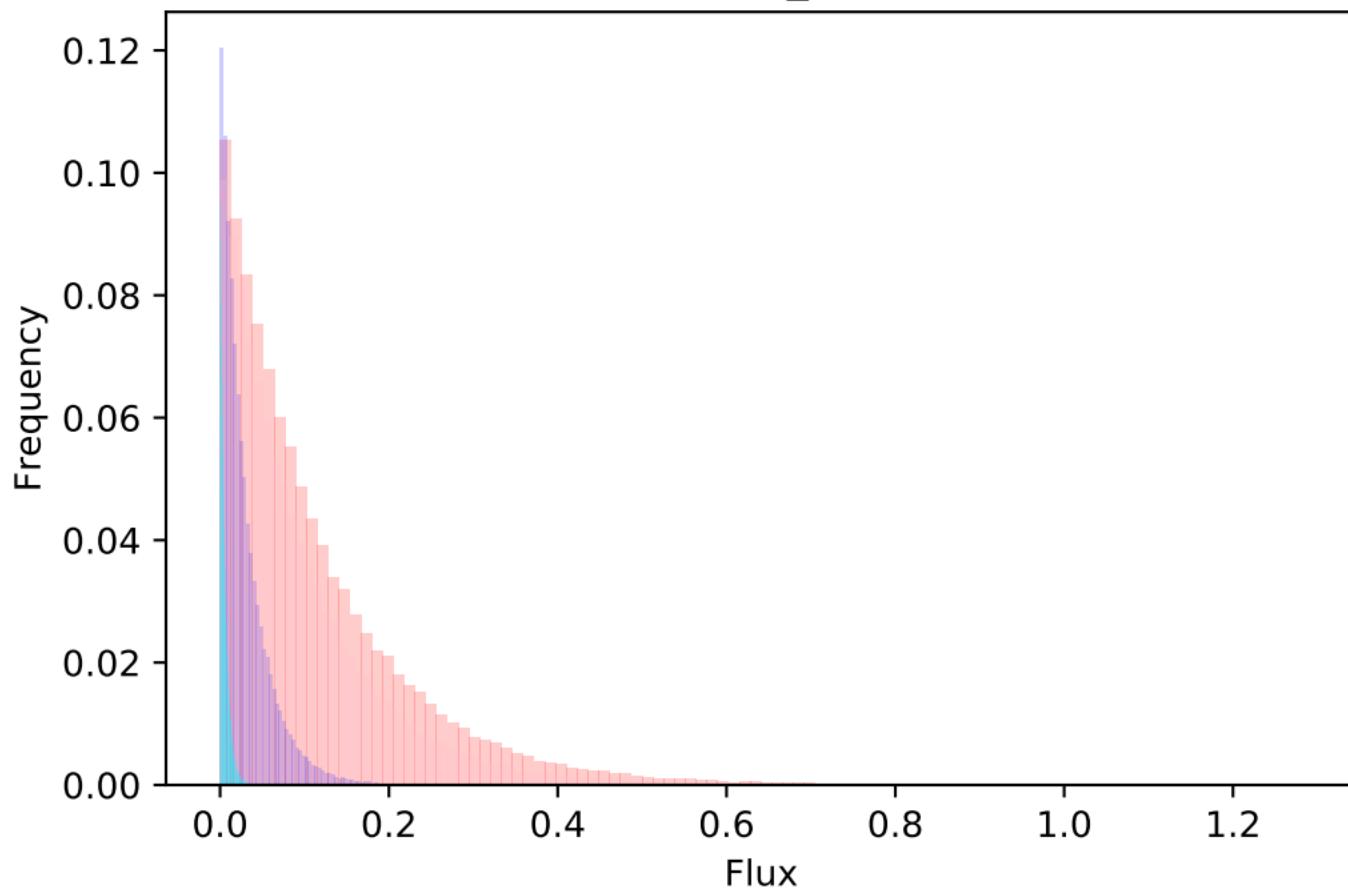
528 : Tyr\_m -->



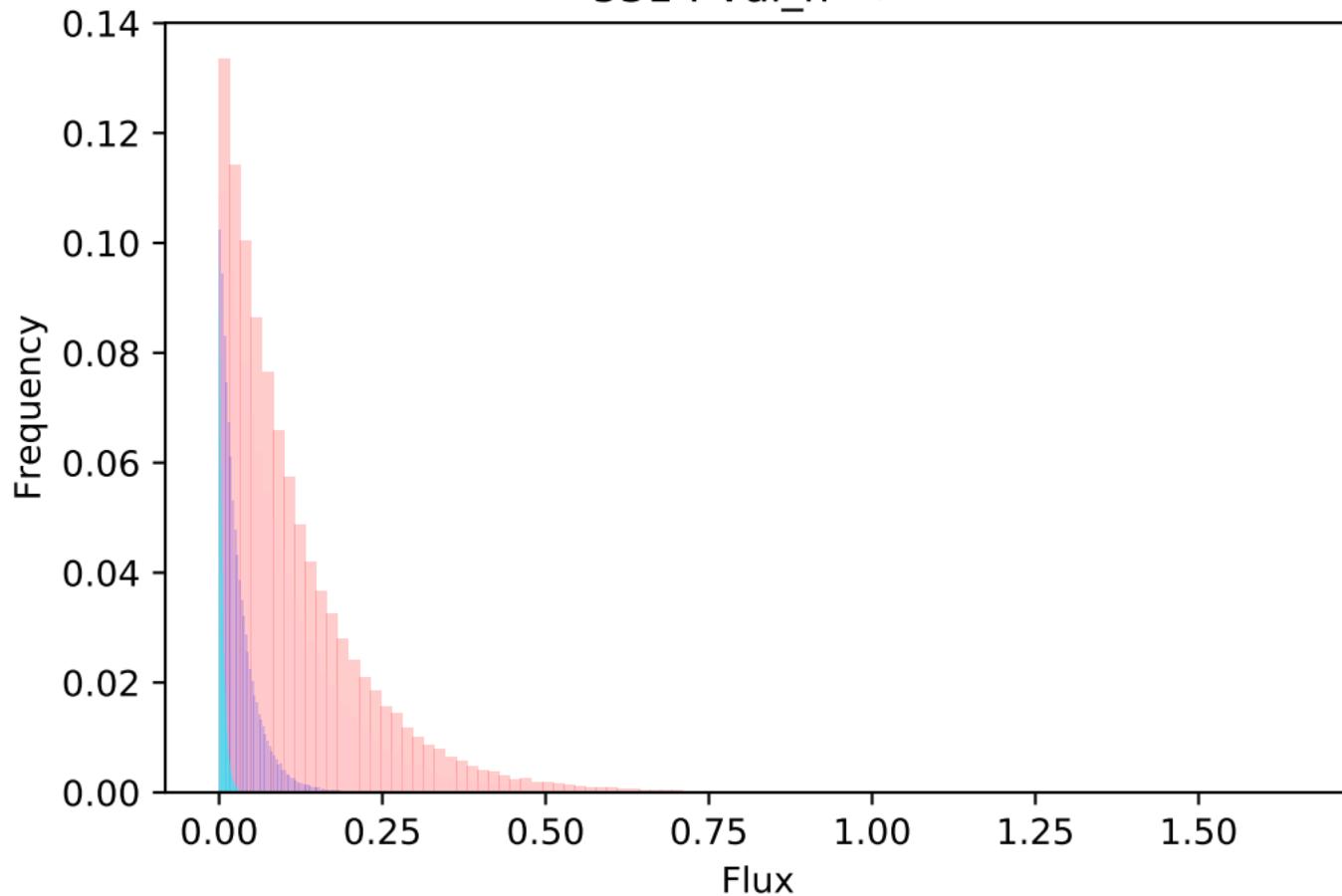
529 : Tyr\_p -->



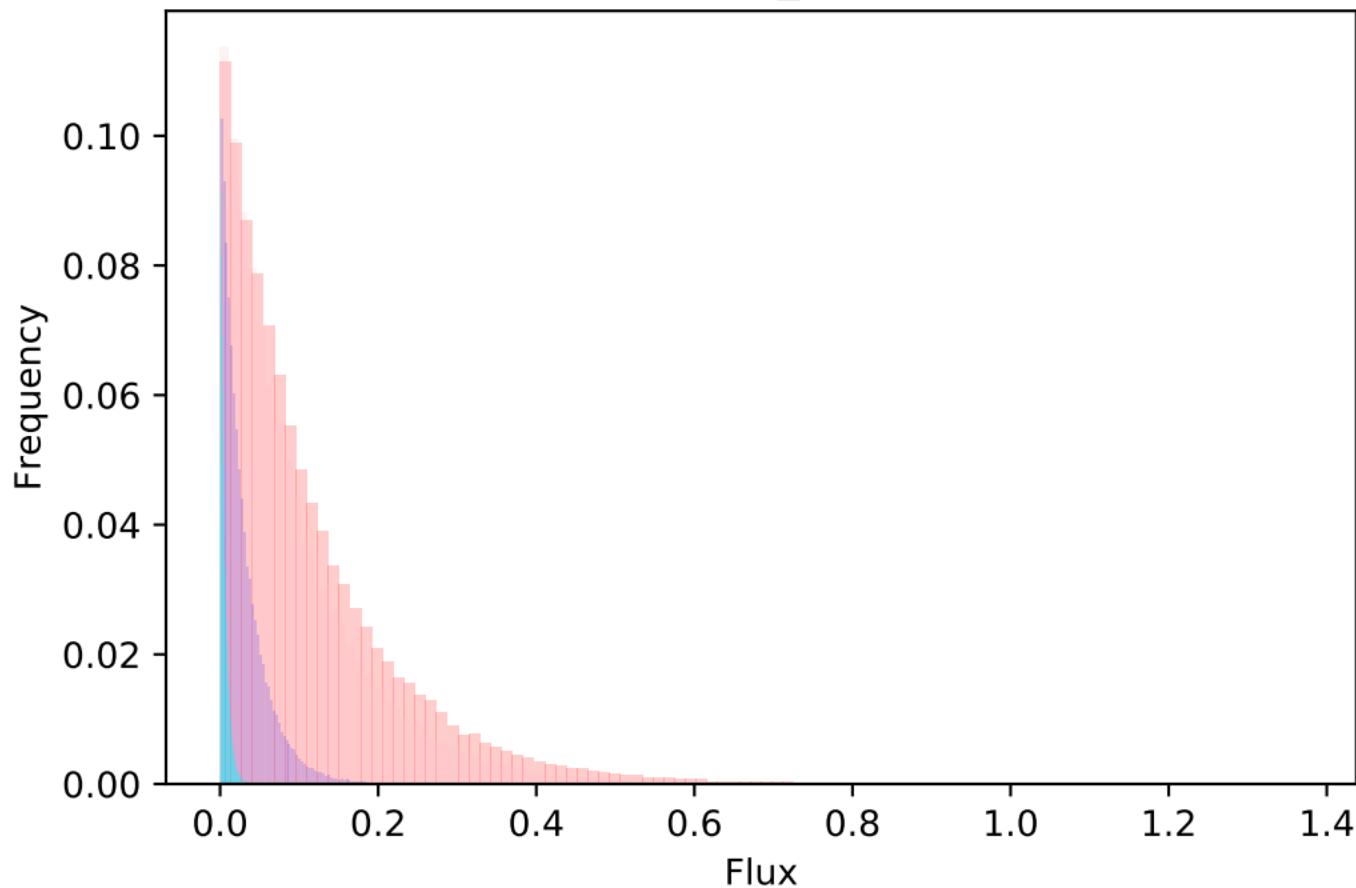
530 : Val\_c -->



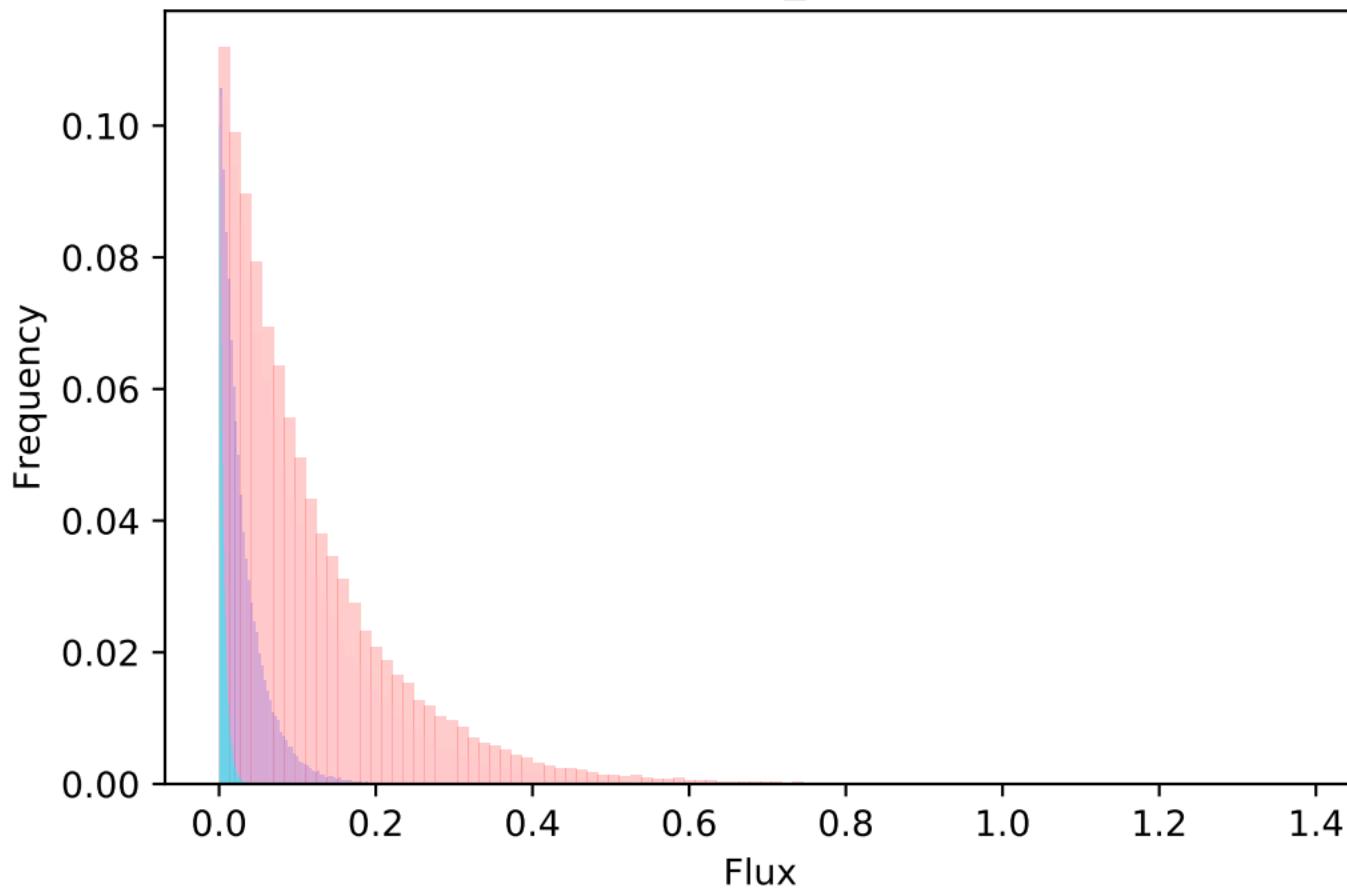
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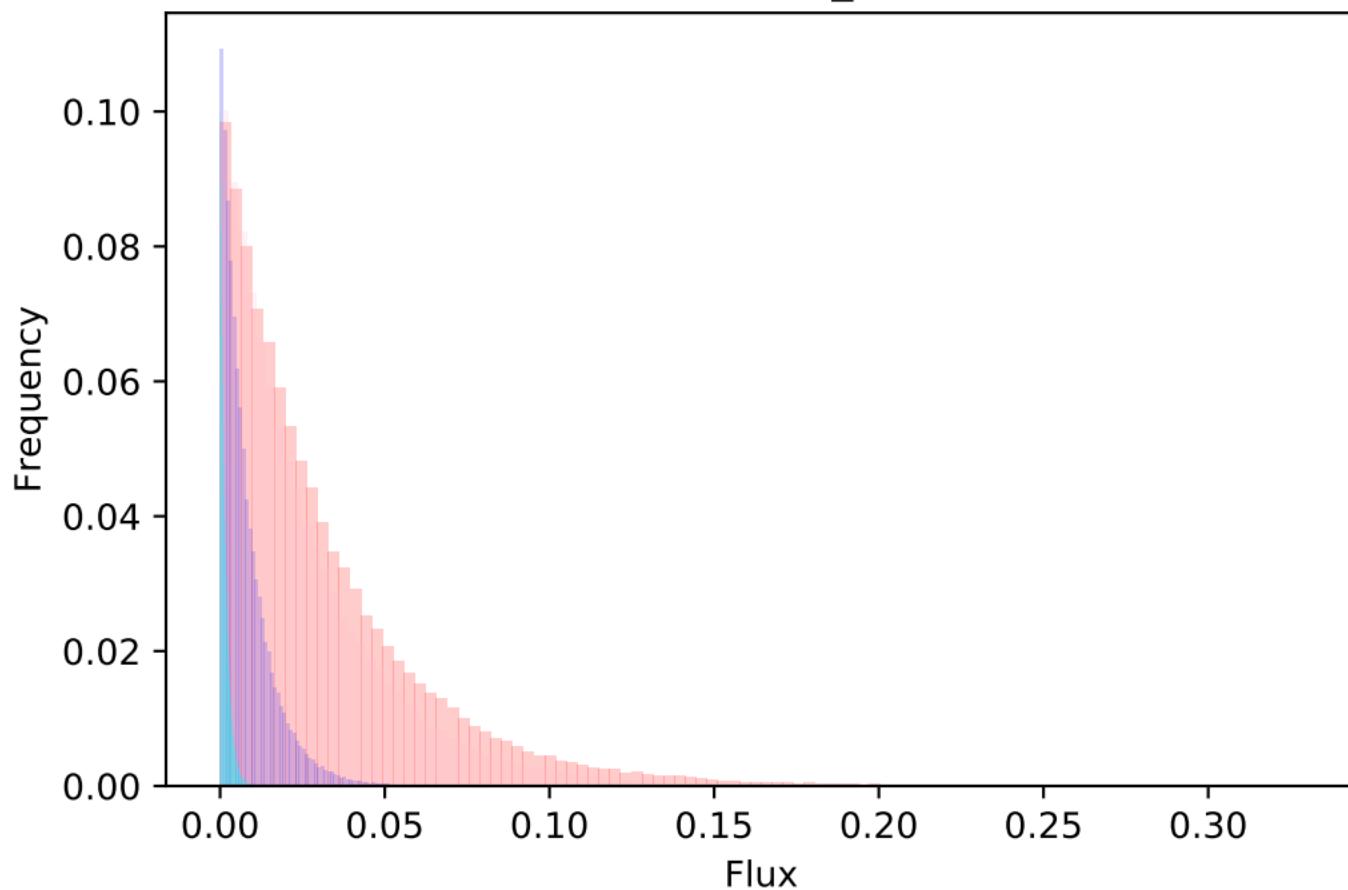
532 : Val\_m -->



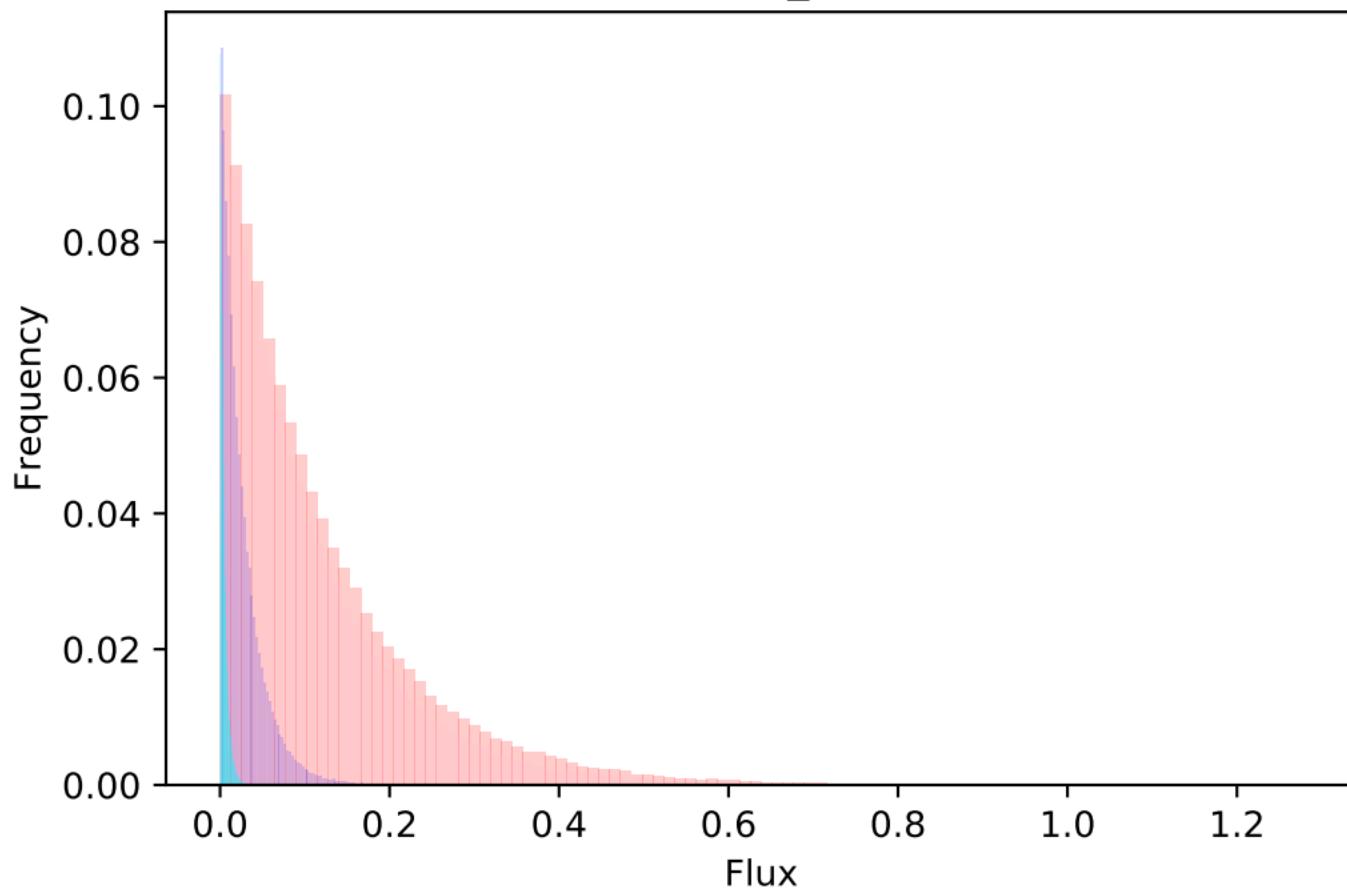
533 : Val\_p -->



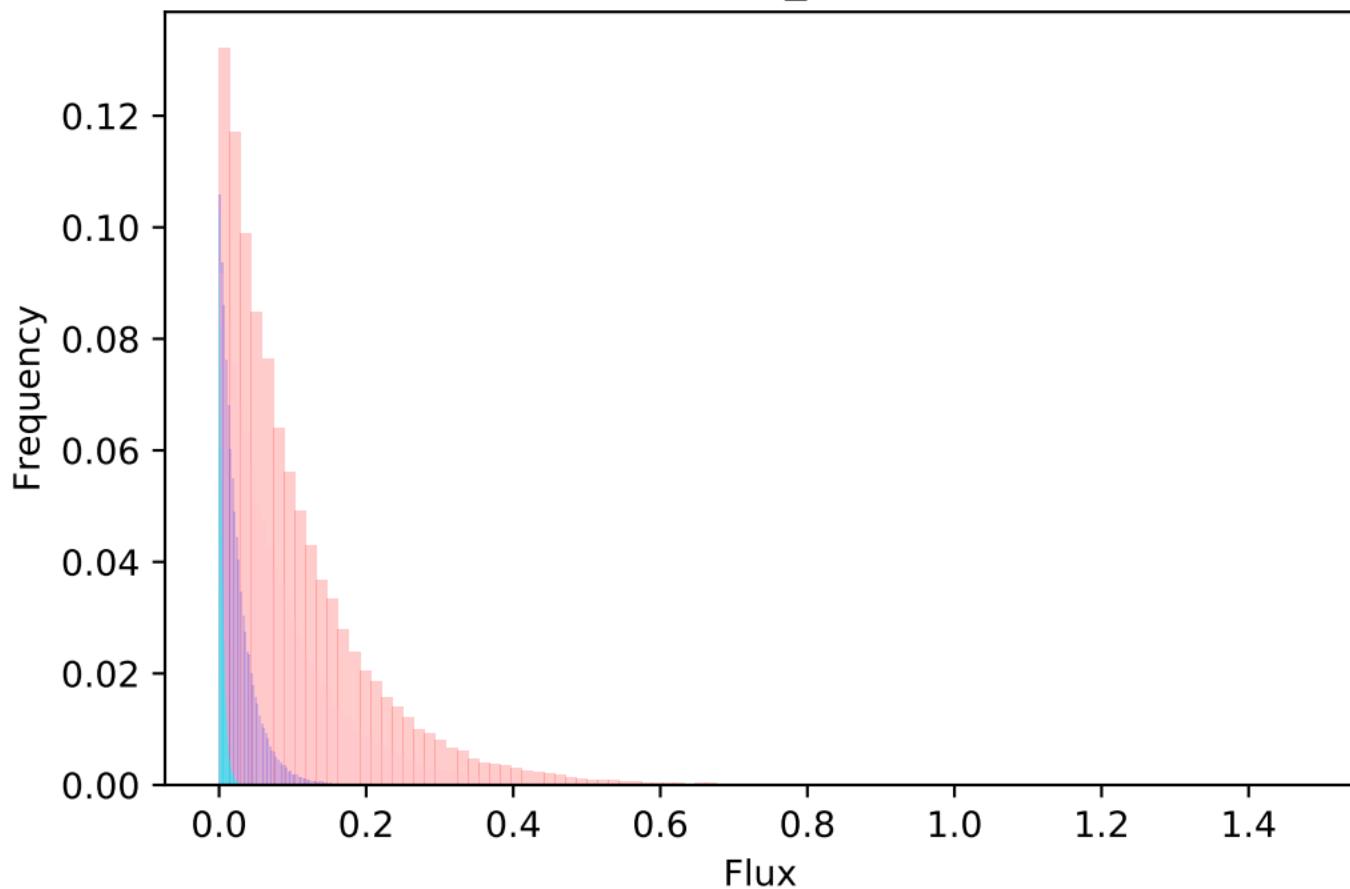
534 : starch3\_h -->



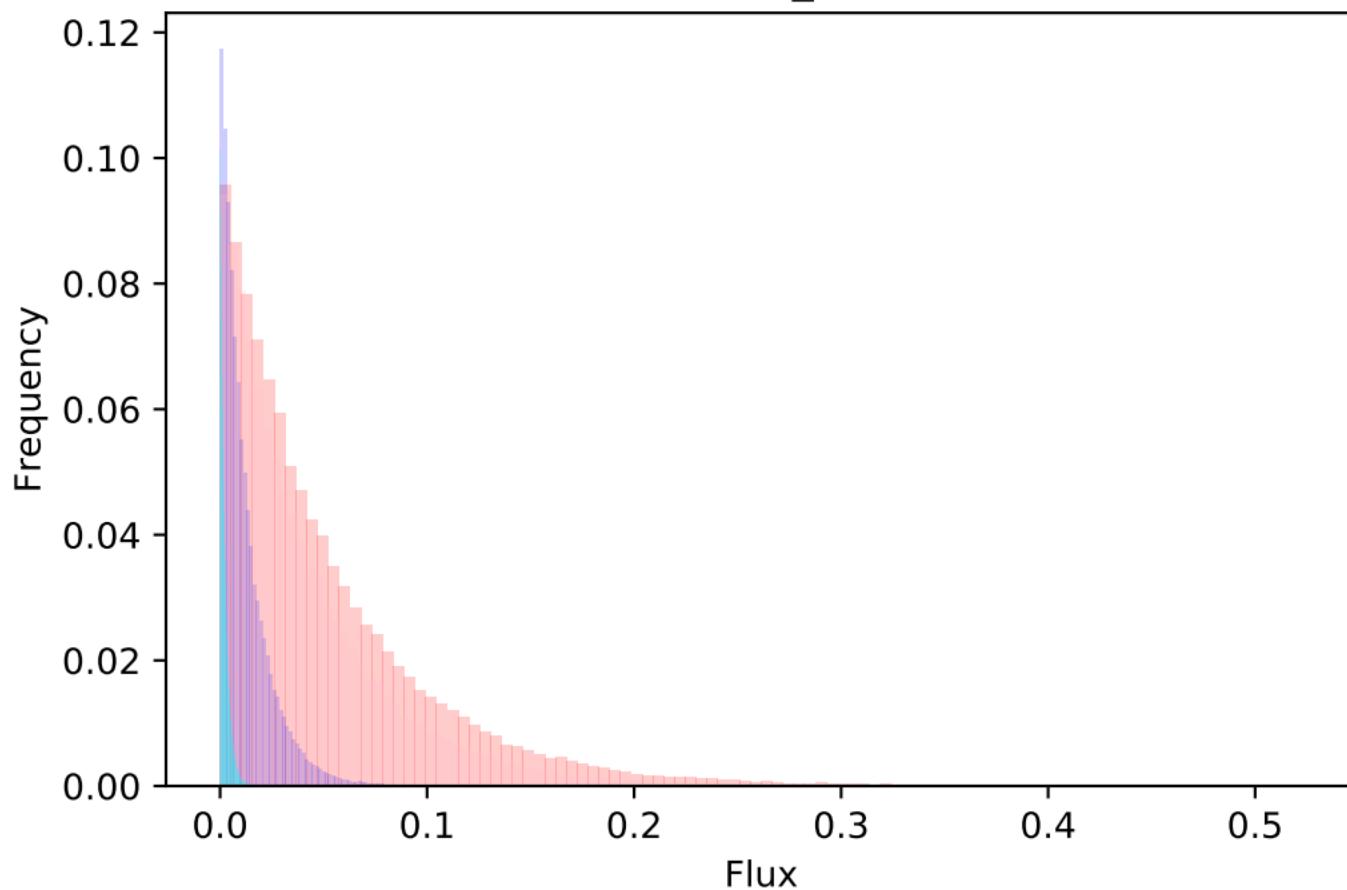
535 : Glc\_c -->



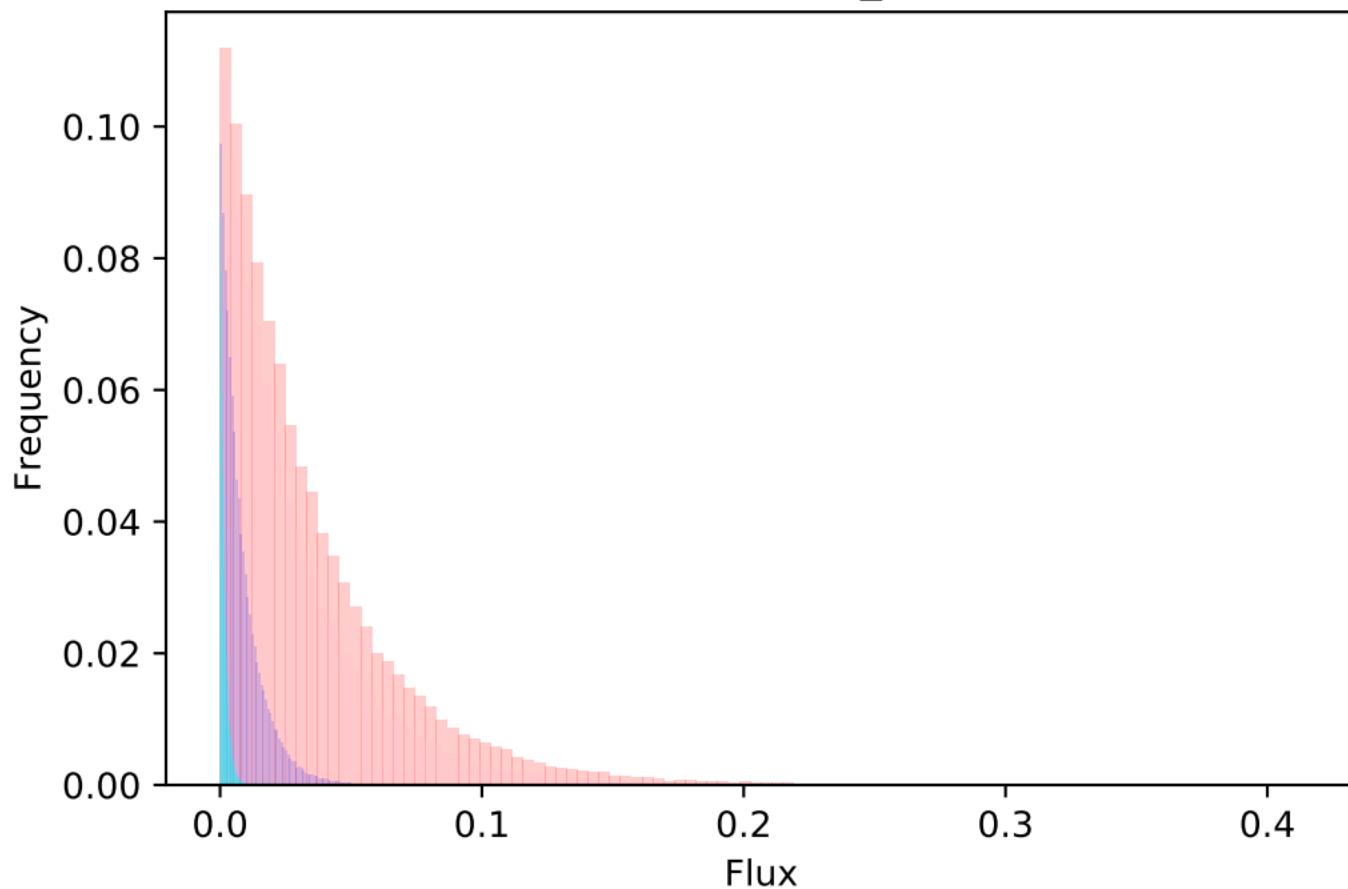
536 : Frc\_c -->



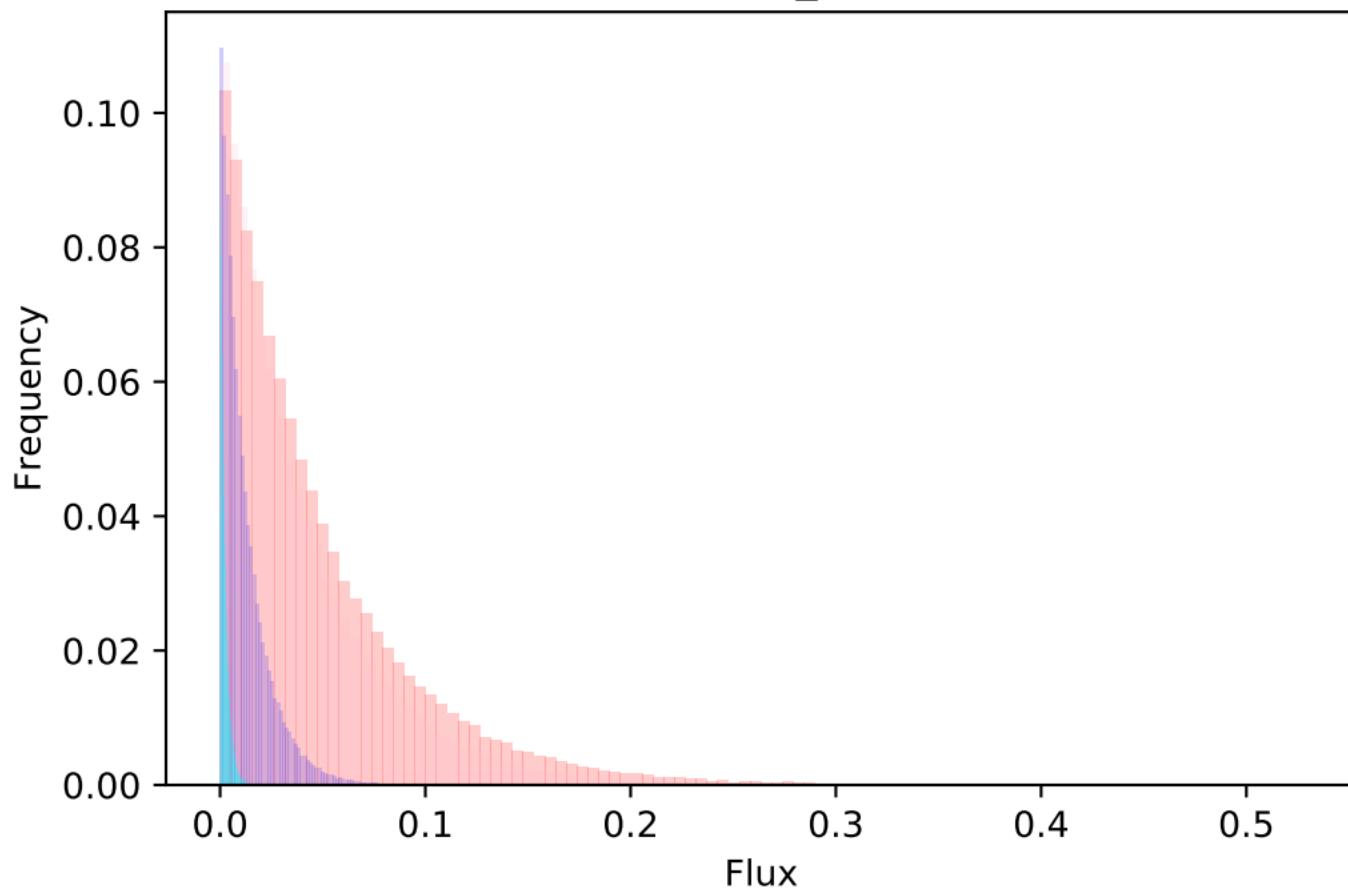
537 : Suc\_c -->



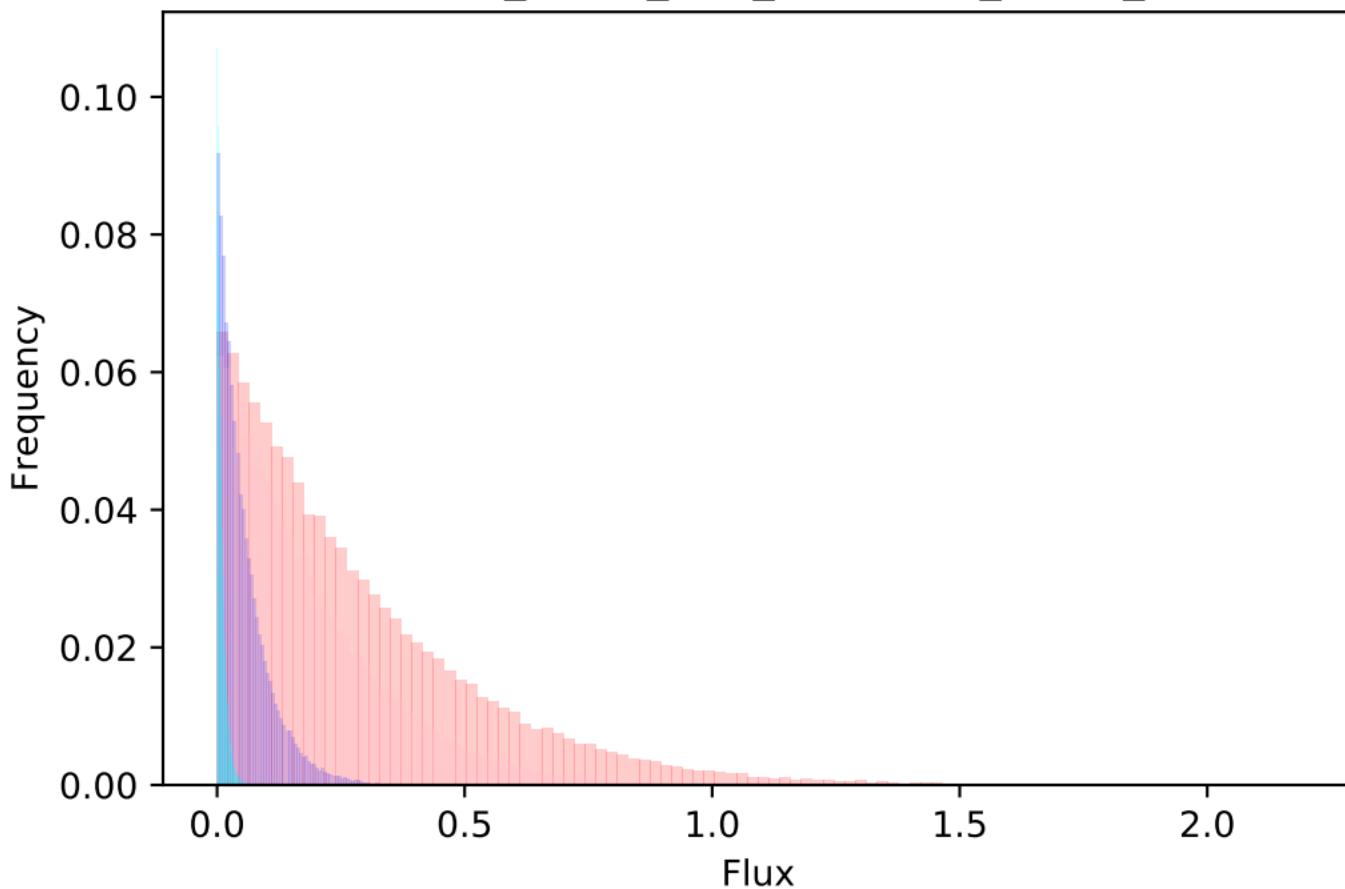
538 : cellulose3\_c -->



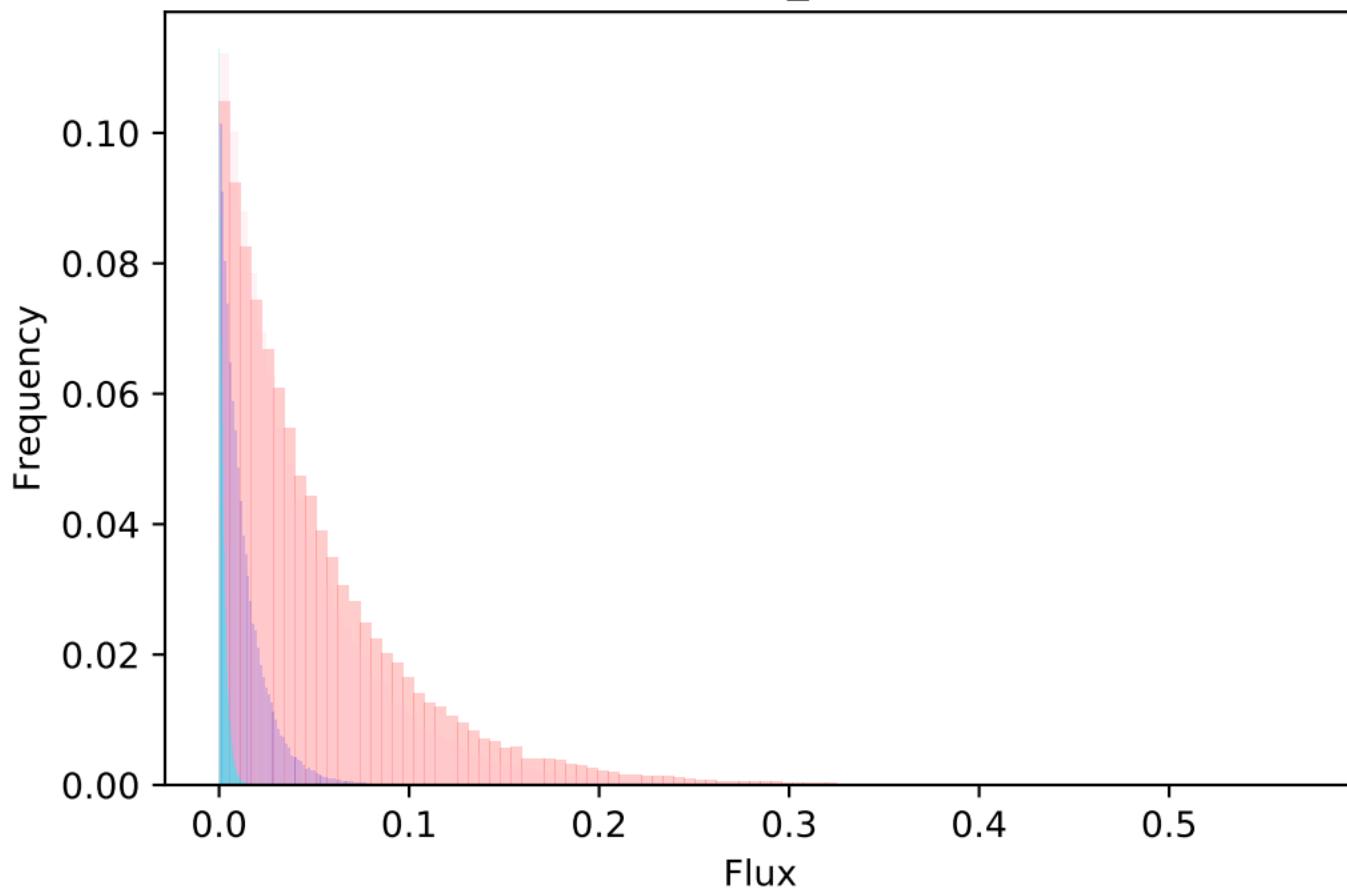
539 : Mas\_c -->

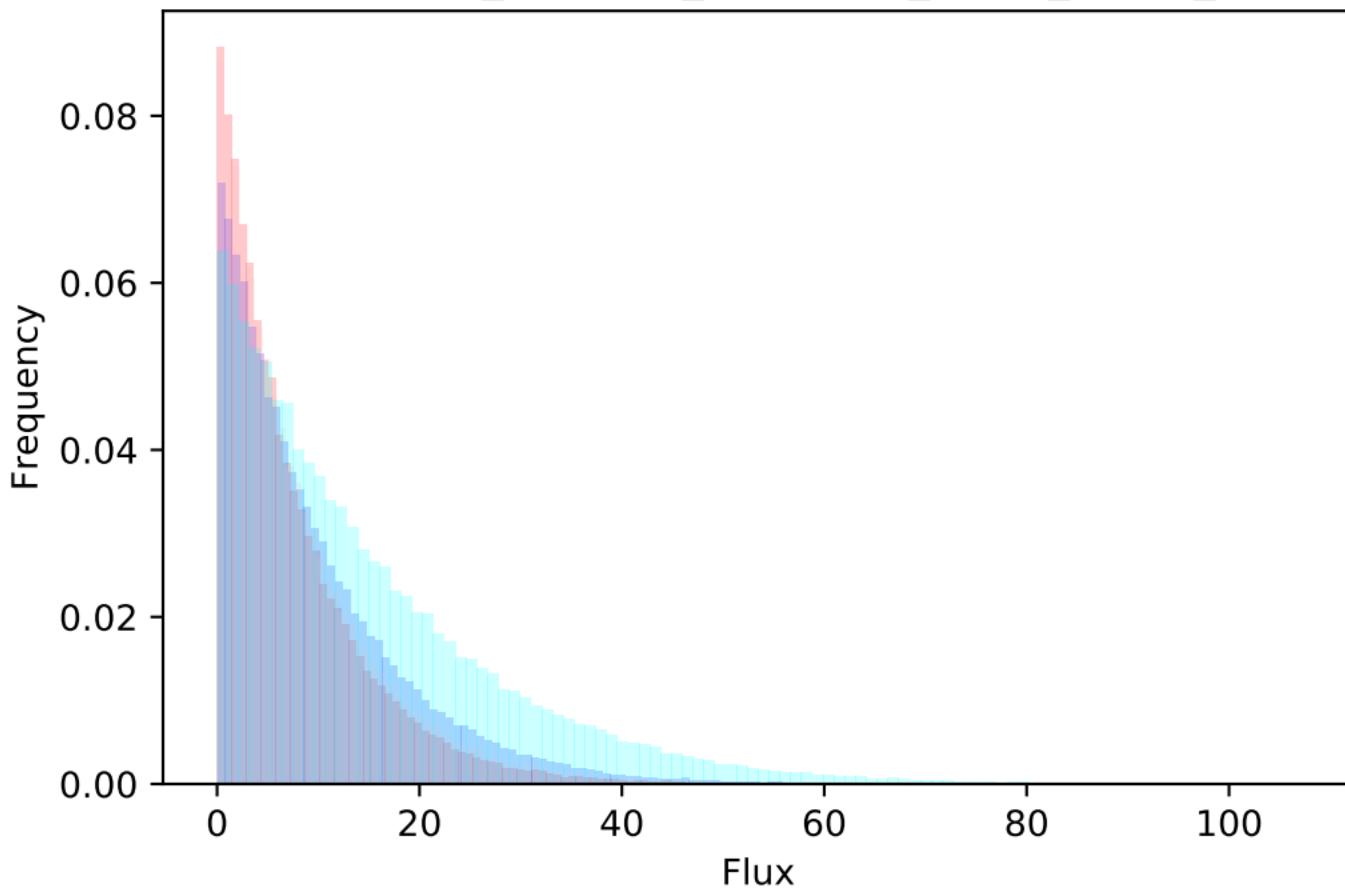
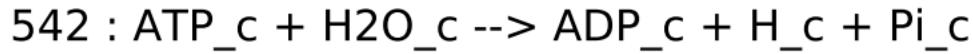


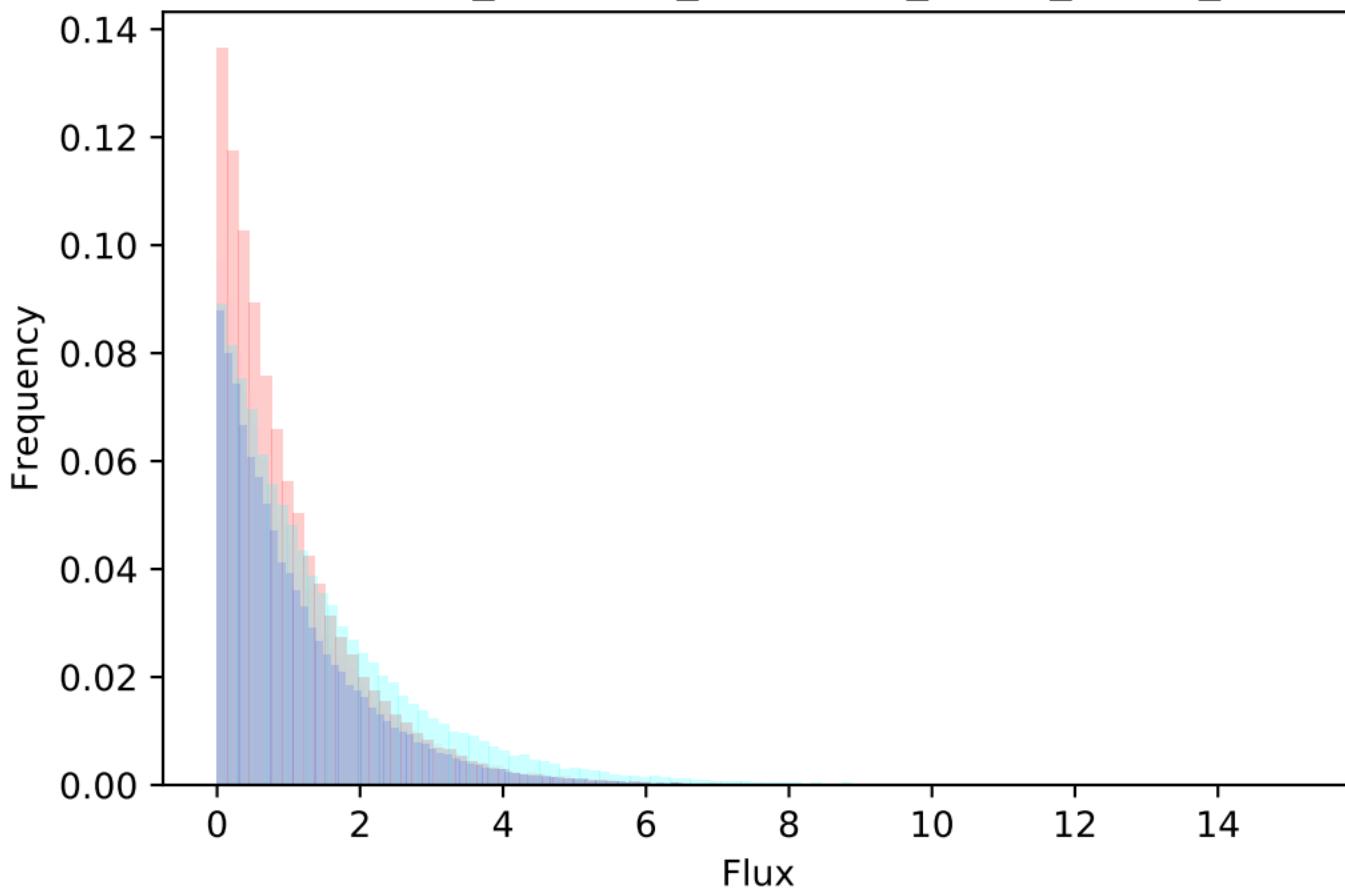
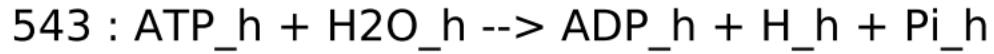
540 : M\_DASH\_ACP\_h --> ACP\_h + H\_h

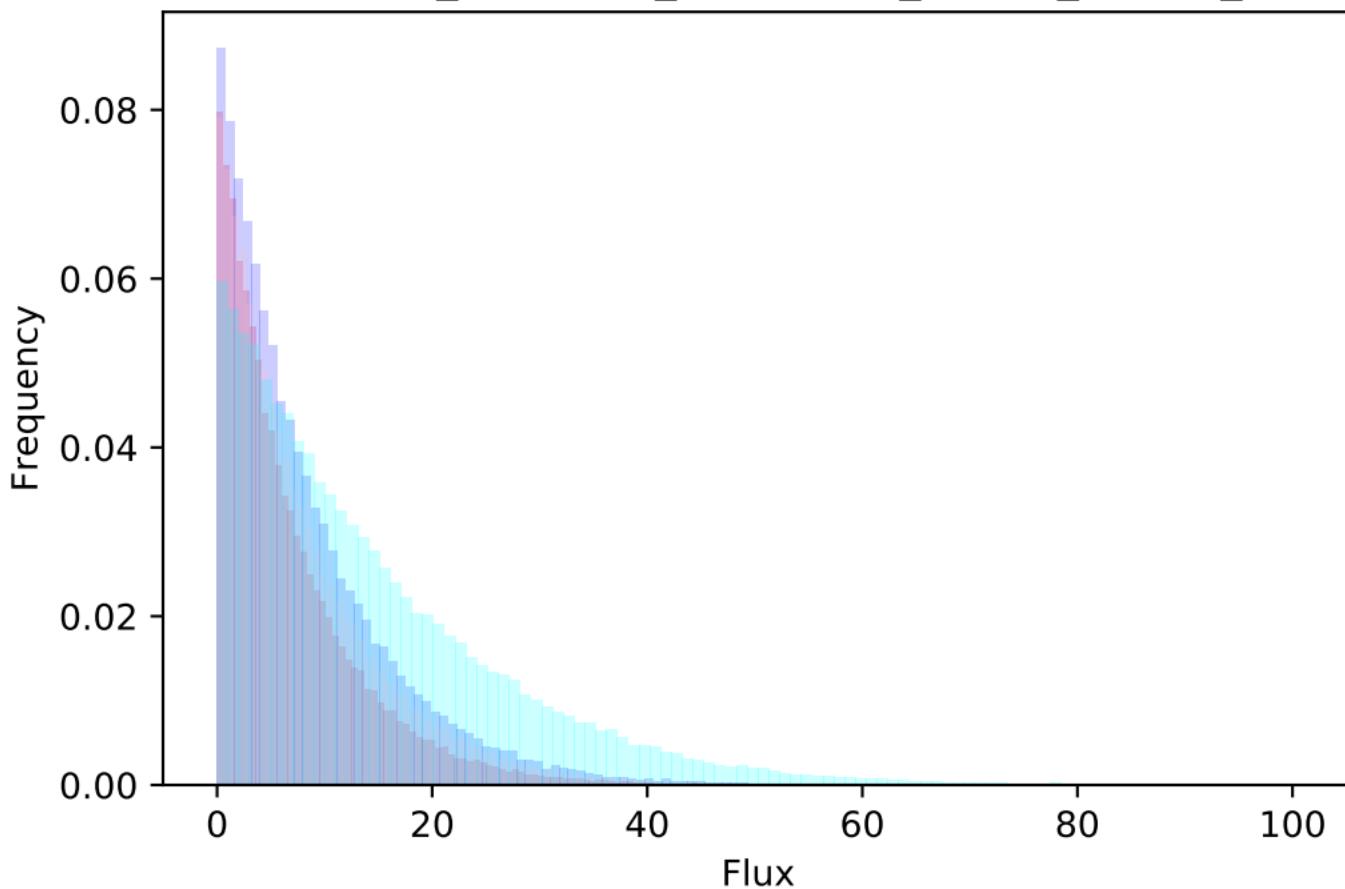
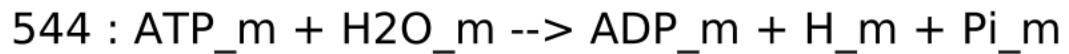


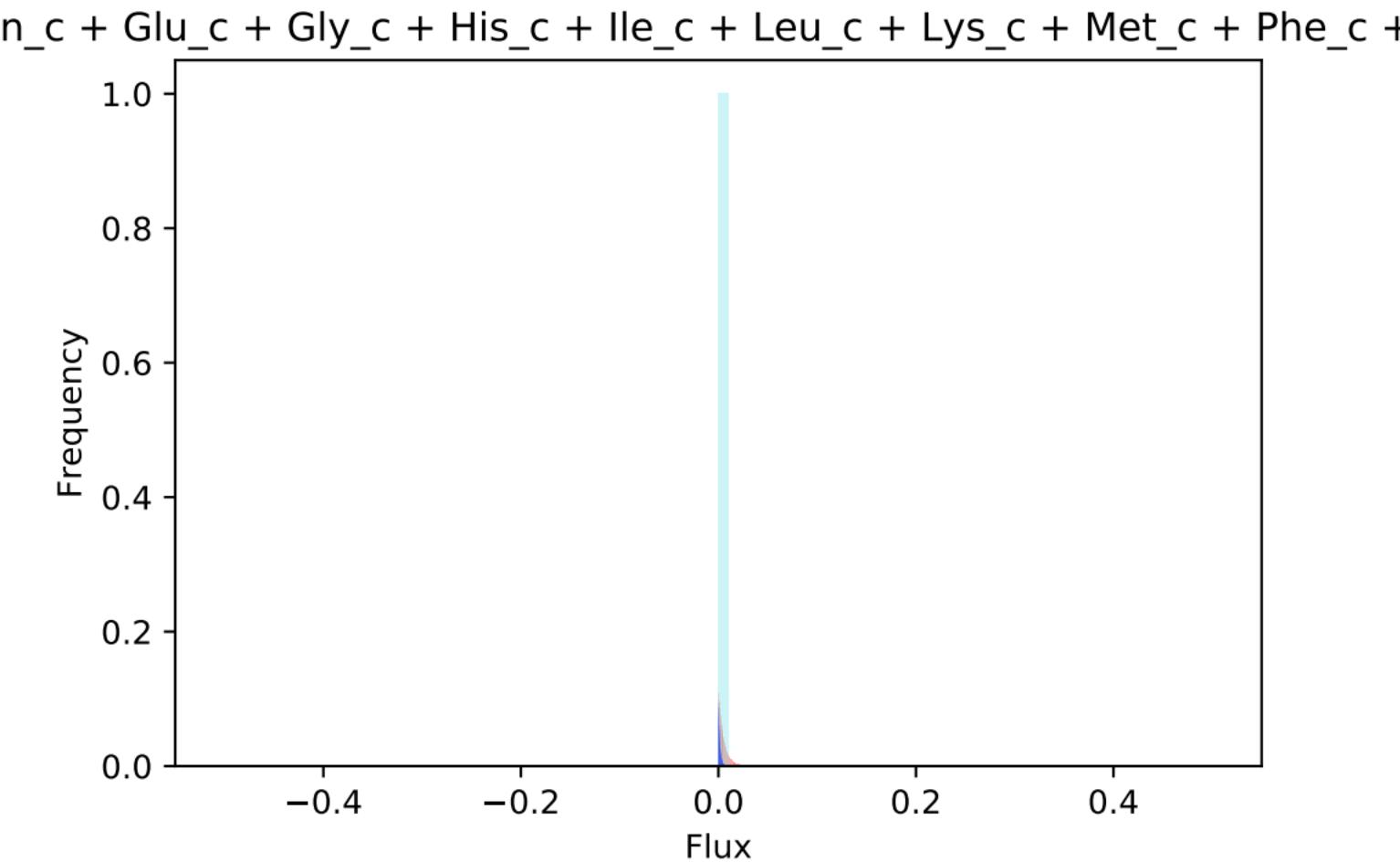
541 : Tre\_c -->



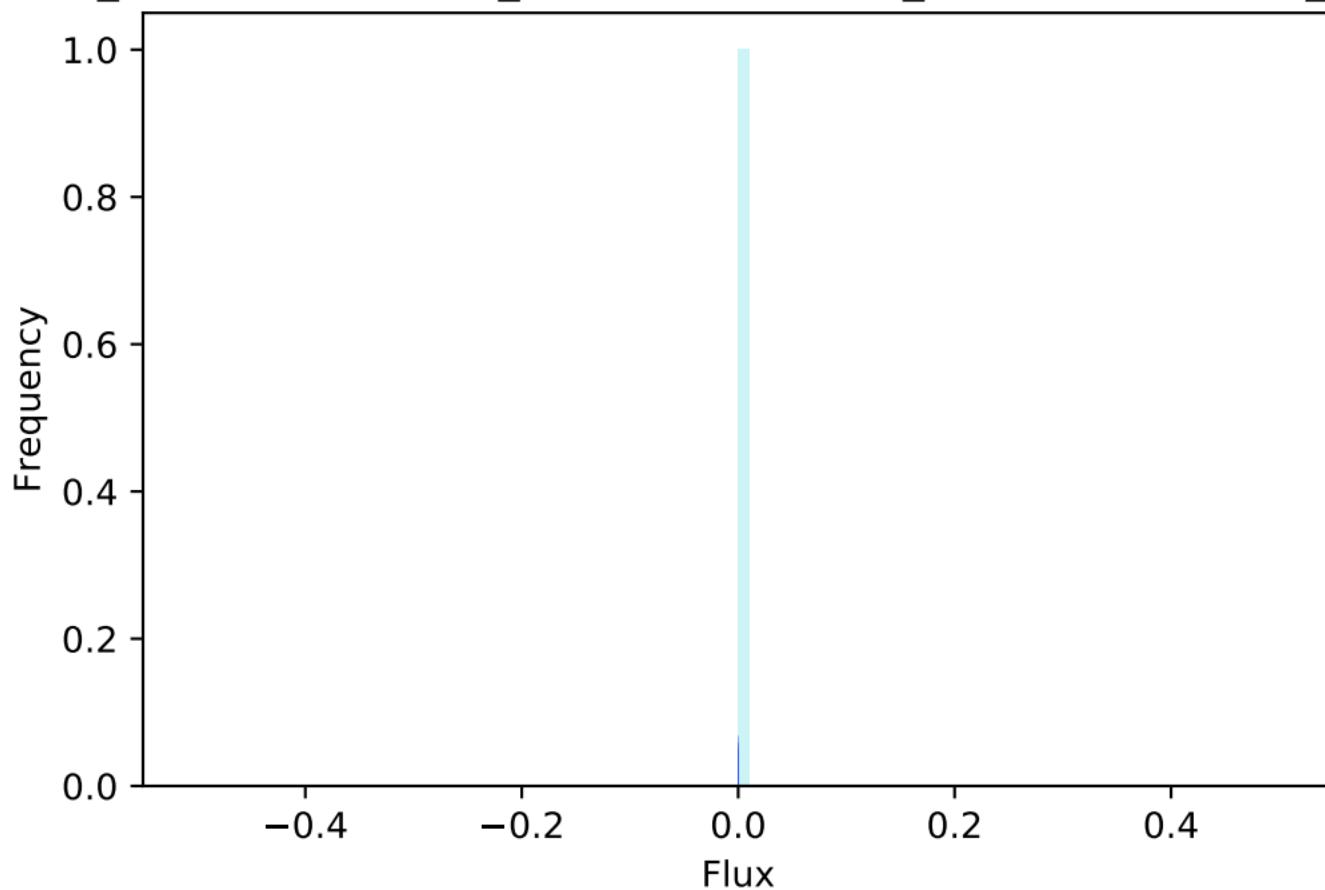




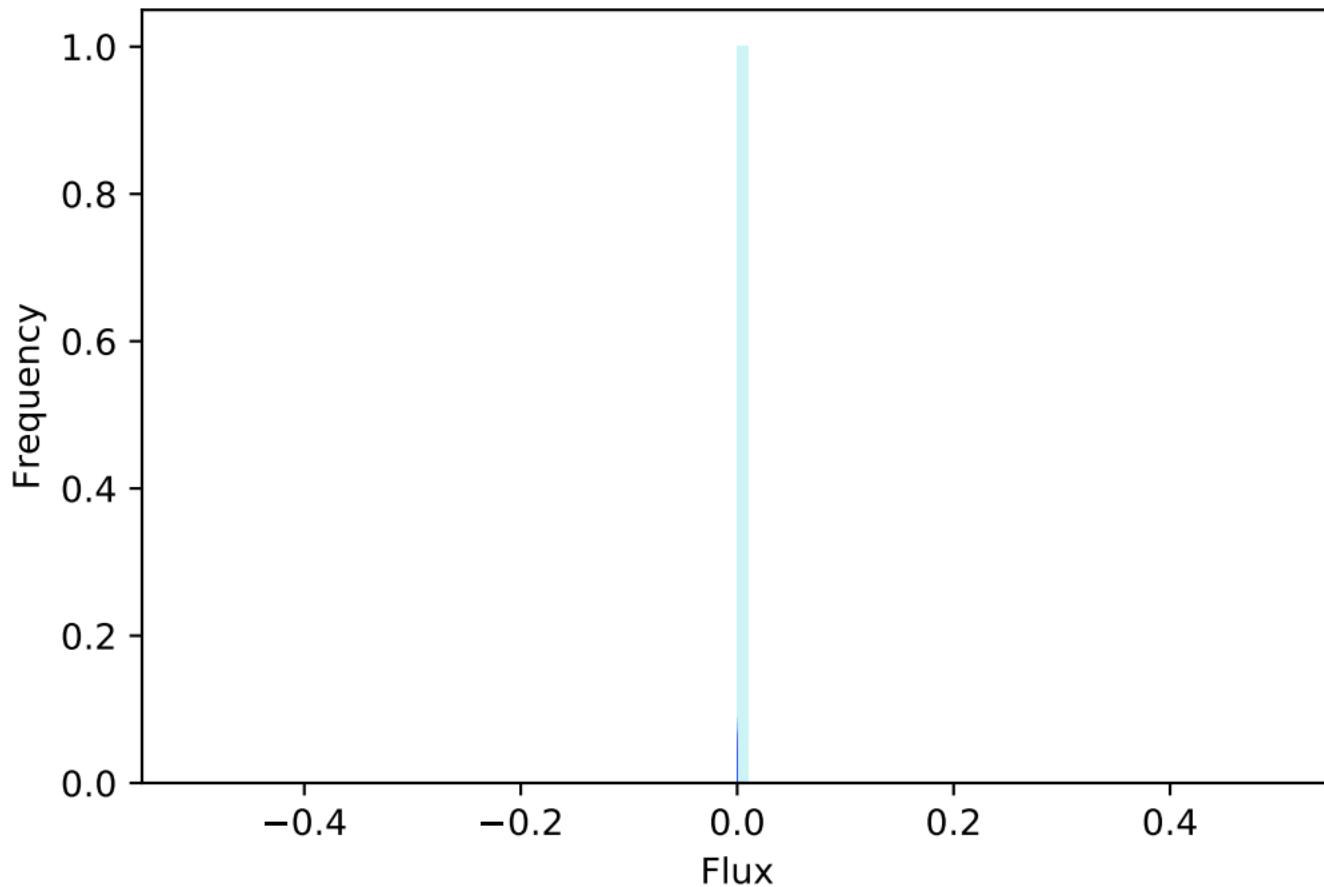




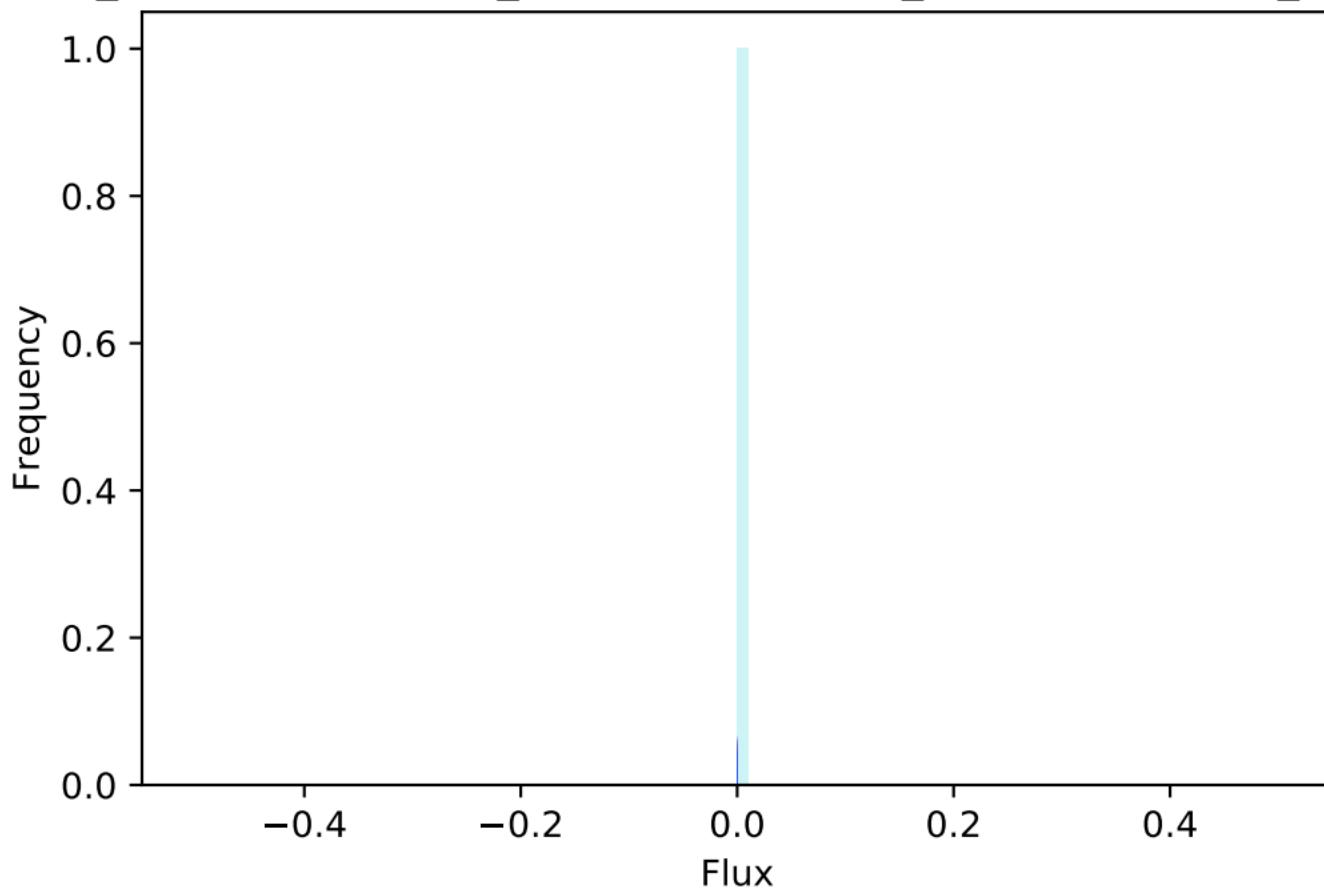
99 Mal\_m + 2.27742 Mas\_c + 30.37981 Met\_c + 14.60727 Orn\_h + 59.



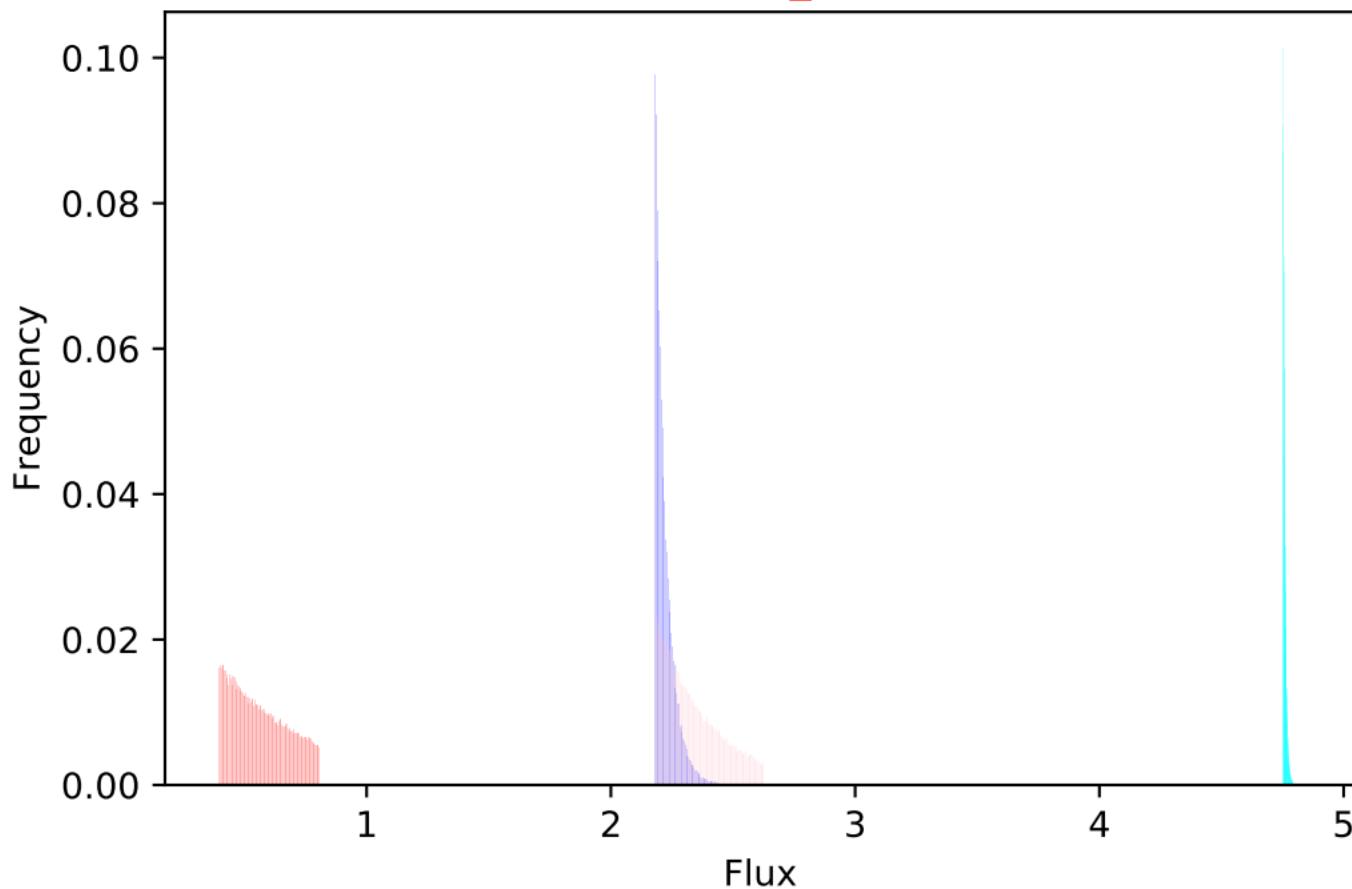
0.89856 Mal\_m + 5.37965 Mas\_c + 51.81818 Met\_c + 9.64682 Orn\_h +



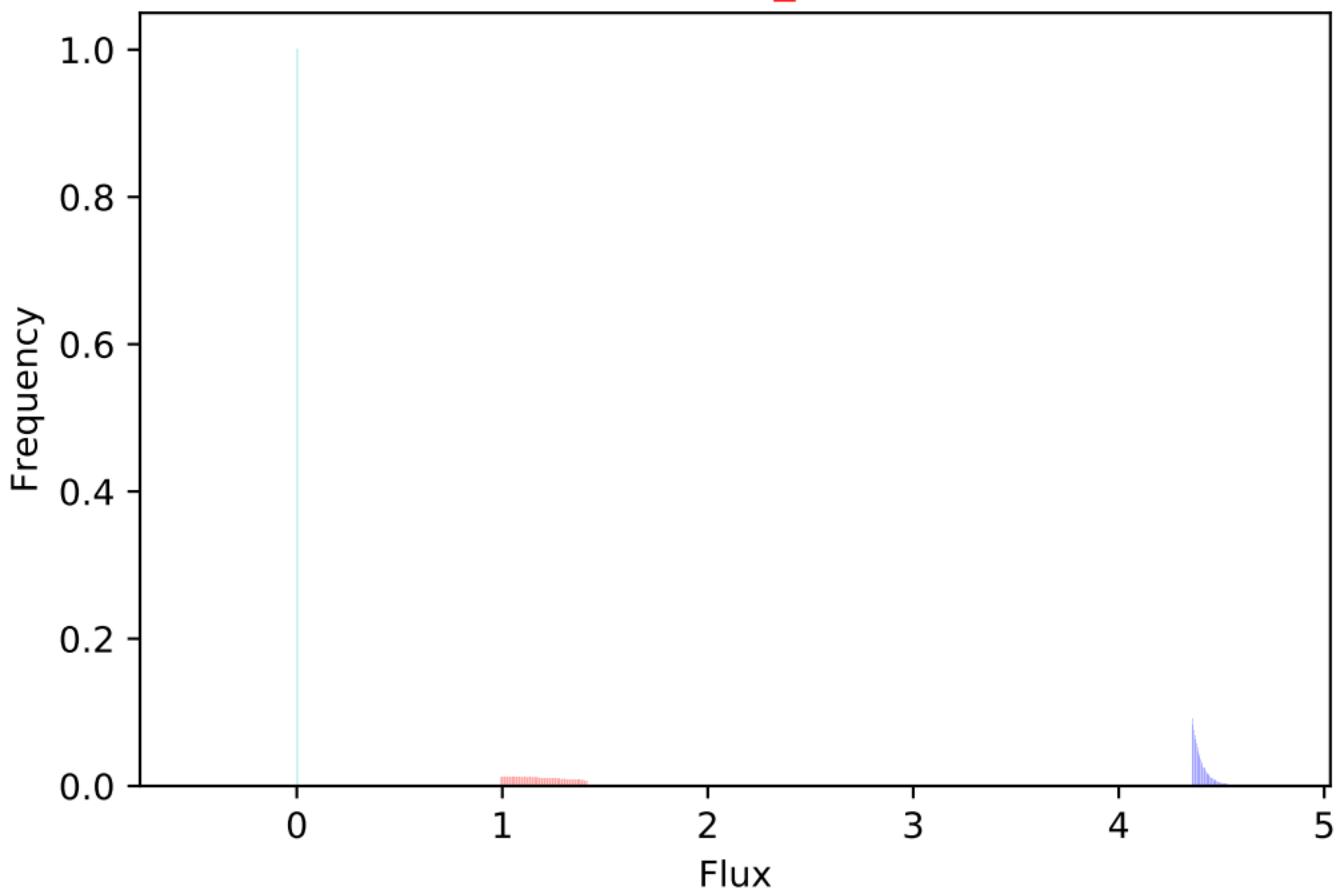
-41 Mal\_m + 2.60958 Mas\_c + 33.61497 Met\_c + 1.58654 Orn\_h + 66.6



549 : Mal\_c -->



550 : Fum\_c -->



551 : starch1\_h -->

