

```

# 1. a a a » a a ä k f S i ... æ t i ...

| ID ('use_cases[].id') | ä » ç m Ø | k • Ø ç æ | k S ä f æ | æ s Ø (k • Ø ç / k S ä f) | a a ä æ (k • Ø ç / k S ä f) | ä » a "å k |
|-----|-----|-----|-----|-----|-----|-----|-----|
-----|
| 'tele_yaw_control' | a a ... a k • Ø ç i ... a m a ... Ø £ å | 1.00 | 0.40 | 0.014 / 0.028 | 38.0 N/m / 18.0 N • m/rad | 90 °
k ¶ a fi ä æ æ a fi 'max_correction' a 0.09 ä » ¥ ä a , a |
| 'cam_follow_adjust' | a « a æ % ç , k £ æ | 0.48 | -0.32 | 0.018 / 0.024 | 24.0 / 12.0 | k æ % å å .. i ... index 1 i ... a S æ ç 0.55 /
-0.25 a k m æ i a |
| 'counterbalance_beam' | a « a f a t a ç a ... a a a t a , æ | 0.85 | -0.30 | 0.013 / 0.022 | 42.0 / 20.0 | k £ å å .. i ... index 1 i ... a
'max_drop=1' a S k "å a a , a a æ i æ - i a « a |
| 'docking_guide' | a a a , a t a ¶ " æ | 0.72 | -0.25 | 0.020 / 0.034 | 30.0 / 14.0 | a , a a ... a , æ a « 'target_offset'
a æ ç a æ æ |

YAML a fi æ ç a "å a fi 'data/coupled_constraint_presets.yaml' a å ç S a a f a a a a 'extra_equations' a
'staged_adjustments' a å a a i a / a « a « a æ a f a a æ a

# 2. a a a i a ... a ç a fi æ å t a m a æ m æ i t

| a a a i a ... a ç | æ å t | æ æ m æ i t | æ m æ ç , | YAML å ç S |
|-----|-----|-----|-----|-----|
| 'ratio_distance' | k • Ø ç Ø a fi æ æ æ a S å .. a k % a ç a k t a S æ .. a æ a a | 0.3 å 1.2 i ... ç m Ø a « a a æ s 1.5 a æ S i ... | 1.0
a k ¶ a a a k • Ø ç a "å ... a a å .. a a a a æ æ i æ æ å a « æ m æ | 'use_cases[].base.ratio_distance' |
| 'ratio_angle' | k S ä f Ø a fi æ æ æ k t a S å k » æ å a å ¶ æ | -0.5 å 0.5 | æ S a a å fi k S Ø ä f a fi a , a a fi a k " ç " a k • Ø ç å a fi 0.3 å
'use_cases[].base.ratio_angle' |
| 'target_offset' | ç æ % ç qu å a fi ç fi æ å k • Ø ç a k S ä f a fi qu a ç a a a « fi æ a / ç a , a ä a a a | -0.03 å 0.03 | æ Ø ç a « æ æ a a a
| 'use_cases[].base.target_offset' / 'staged_adjustments[]' |
| 'softness_distance' | k • Ø ç k , a fi a t a t a a / a ç a t a , a æ æ S a a a » a 'æ a a a a | 0.012 å 0.025 | ä a a a a a m æ i a æ S a a a a
'use_cases[].base.softness_distance' |
| 'softness_angle' | k S ä f k , a fi a t a t a a / a ç a t a , a | 0.020 å 0.040 | k • Ø ç å a fi 1.5 å 2.0 a a ç fi æ i a « k m æ i a |
'use_cases[].base.softness_angle' |
| 'spring_distance.stiffness' | k • Ø ç a a ä æ [N/m] a | 20 å 45 | a , a a a æ % a a a fi k æ % æ S a « æ % - Ø ç a å æ S Ø « a a » a a a a
'use_cases[].base.spring_distance.stiffness' |
| 'spring_distance.damping' | k • Ø ç a a t a ä æ [N • s/m] a | 2.0 å 3.5 | å æ S a « å a a a f æ ç 1:10 ç ä f a S k m æ i a |
'use_cases[].base.spring_distance.damping' |
| 'spring_angle.stiffness' | k S ä f a a ä æ [N • m/rad] a | 10 å 22 | Ø « a a a a k S ä f å a ä » æ a « a k • Ø ç k , a m ç ¶ i a a |
'use_cases[].base.spring_angle.stiffness' |
| 'spring_angle.damping' | k S ä f a a t a ä æ [N • m • s/rad] a | 0.7 å 0.9 | a , a a a æ Ø 'dt' a « æ a a f 0.6 å 1.0 a ç fi æ i a « a |
'use_cases[].base.spring_angle.damping' |
| 'baumgarte' | æ % ç fi k "æ fi k £ æ fi a t a / t a | 0.35 å 0.40 | Time step 0.003 å 0.005 s a æ æ i a a a æ a a dt a S a fi 0.2 å 0.3 a «
| 'use_cases[].base.baumgarte' |
| 'slop' | k m æ i k "æ fi a f a £ a t a f [m] a | 5e-4 å 7e-4 | Ø « æ m æ ç a a "æ i æ ç t a a i a a a a S a fi 1e-3 a æ S æ S a fi | 'use_cases[]
| 'max_correction' | 1 a , a a a S k m æ i , a a æ S k £ æ Ø [m] a | 0.08 å 0.10 | ç fi æ æ æ a æ a "å a a fi 0.12 a æ S æ k a |
'use_cases[].base.max_correction' |
| 'extra_equations[]' | k £ å å .. a fi a a a i a ... a ç a | å å .. a S ratio 0.3 å 0.8 | k "å a a , a a æ i æ - i a « a a å a a fi
'ChronoCoupledConditionWarningPolicy_C' a fi 'max_drop' a m æ % ç m a | 'use_cases[].extra_equations' |
| 'staged_adjustments[]' | a , a a ... a a m a fi a a i a ... a ç ä æ a | æ » æ | CSV a , a æ « 'phase_id' a k æ % å a a f å æ a a a m æ , æ a k f
'use_cases[].staged_adjustments' |

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3. YAML

```
\begin{document}
\section*{Coupled Constraint Presets}
```

```

\rowcolors{2}{gray!10}{white}
\begin{longtable}{>\bfseries p{35mm}p{40mm}p{18mm}p{18mm}p{25mm}p{30mm}p{40mm}}
\rowcolor{headerbg}{\color{headerfg}ID} & {\color{headerfg}çmØ } & {\color{headerfg}L• Ø çæ } &
{\color{headerfg}L§ äfæ } & {\color{headerfg}æ§ Ø } & {\color{headerfg}a a äj æj} & {\color{headerfg}å L } \\
\endfirsthead
\rowcolor{headerbg}{\color{headerfg}ID} & {\color{headerfg}çmØ } & {\color{headerfg}L• Ø çæ } &
{\color{headerfg}L§ äfæ } & {\color{headerfg}æ§ Ø } & {\color{headerfg}a a äj æj} & {\color{headerfg}å L } \\
\endhead
tele\_yaw\_control & a a ... a L• Ø çï... a ma ...Ø Eå & 1.00 & 0.40 & 0.014 / 0.028 & 38.0 N/m / 18.0 N•m/rad & 90°L¶ a fl
max\_correctionâ \\
cam\_follow\_adjust & a «a æ% ç,L£ æ£ & 0.48 & -0.32 & 0.018 / 0.024 & 24.0 / 12.0 & L£ ââ.. index1 a Lç%â \\
counterbalance\_beam & a «a fa ‡a ç a ... a a'a ‡a „æ & 0.85 & -0.30 & 0.013 / 0.022 & 42.0 / 20.0 & max\_drop=1
a §L£ ââ.. a a ,a a \\
docking\_guide & a a a ,a ‡a L“ â & 0.72 & -0.25 & 0.020 / 0.034 & 30.0 / 14.0 & a „a a ...a ,ææ§ target\_offset L“çæ \\
\end{longtable}

```

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\bigskip
æâma (a ‡a ,: ratio\_distance 0.3â 1.2, ratio\_angle -0.5â 0.5, softness L• Ø ç 0.012â 0.025, L§ äf 0.020â 0.040

\end{document}

```

- YAML a a L “â ç æ a a a ââ a fla ä Lma a ‡a a (a ... a fla a ... a «Lj a a „a fla “a a ï... a §â ç a «â a L¼.

- Ø •â a a „a ç a ... a «a a Ø a fl ‘landscape’ a ‘portrait’ a «âæ a a ‘p{mm}’ a fiâ a çfiç a «â a a a fl“çæ a fa a a a a

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### 5.3 Ø çma j a ç
- PDF a «âæ a a a ,a/a «a fl ‘docs/media/coupled/’ a a a a flçæ a „a a (a ...a ,a fi ‘posters/’ a «ä â a a Wiki a fia fla /a a fla “a ‡a fla a
- ââ•æ fiaæma j/a ”i... A3i... a a ‡a a „a—a ...a ï... a A4 a §âa•a a ââ a fla a a ‡a a j/a ” 10â 11pt çfiâi a

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### 5.4 ââ a a a—a ...a ,a ææL...a ,a °

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| çfiç | æâma a a—a ...a , |
|-----|-----|
| Pandoc æâ% | <https://github.com/jgm/pandoc/releases> a a a a/a a “â ââ a æ a fl ‘apt-get install pandoc’ |
| LaTeX a ma ‡a ,a ‡ | TeX Live (‘texlive-full’ or ‘texlive-latex-extra’), MiKTeX, a a a a fl ‘tectonic’ |
| a a'a ‡a | Noto Sans CJK / Yu Gothic / Hiragino a “a 'ææL“ âiæ a a'a ‡a |

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a ,a ...a «a «ç æ a §a fl ‘pip install pandoc’ a L'flj a a a a fia fia PyPI a «âæ a a a—a ...a ,a ââma a “a a a ææ a a æ a a a ,a æ æ

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$ pip install pandoc
Defaulting to user installation because normal site-packages is not writeable
WARNING: Retrying ... Failed to establish a new connection: [Errno -2] Name or service not known
...
ERROR: Could not find a version that satisfies the requirement pandoc (from versions: none)
ERROR: No matching distribution found for pandoc

```

```

a a fia a a Linux ç æ a §a flaâæ a fia a a «a a a—a ...a ,a a a ...a ,a Equç—a §a fia /a ‡a „a a ...a «a æâma a æ a

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sudo apt-get update
sudo apt-get install pandoc texlive-latex-extra texlive-fonts-recommended

```

```

ââ a æa a ââ â âfa »a fia •a §a ‡ 5.1 a fi Pandoc a ‡a a ‡a a âi Lj a a a ma PDF a ç æ a a a æ a ‘--verbose’ a “a a •a §a ‡a â a a a
‘pandoc ... || { tail -n 50 pandoc.log; exit 1; }’ a fia a a «a ,a æ â Ø a a Ø çma æâma a æ a

```

```

### 5.5 PDF â æØ a fia ç »a a (a/a

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å Ø æk tå a a «æ% å ç»i... a a a a fl GIFi... a Ø tç»a a å·å a flä»¥ä a å Ł a «a a fa a a a a

1. a ,a f a a a fç°ä

- æä% a a ... a «: 'obs-studio'i... å ç»i... a 'peek' or 'asciinema + agg'i... a ç a a ja ... a •a §a ‡ GIFi... a
- å Ø tŁ§£å äf: 1920x1080 a ¶ a fl 1280x720 a ç a ... a a a «æä a µ/ a »a fl 14pt ä»¥ä a «Ł»äi a a UI a Ł“,a ç a a a a a a ...a fl/

2. Ø tç»æØ i... ä¼ OBSi...

- a %a ...a „a «a ç»Ø ç a ,a f a a a f a a a ¶ a fl a fa f a ‡ a a fa ,a f a a a f a a §a ç a ...a a a «a æäi a
- Ø tç»Ø § ä 'pandoc ...' a ‡ a a ‡ a a äi Łi ä ç æ a a a PDF a a a ja/ a 'a ...a §Ø a æ a a æ a a
- Ø tç»å æä¼ 'ffmpeg' a § GIF a ,äæ a a å·å :

“bash

ffmpeg -i pandoc_demo.mp4 -vf "fps=12,scale=1280:-1:flags=lanczos" pandoc_demo.gif

“

3. çæØ a ma a ,a a

- å Ø »a «çfiç i... ä¼ ä Convert presets cheat sheet to PDFâ i... a 2 § ç äfŁiµç”a
- a ‡ a a ‡ a å¥å ä»a fl a ,a ...a a ...a a •a §a ...a a «a a a fl a OBS a fl a Łiµç” ä a a fa „a «a ...a %a «a a a /a /a a a æå„å a a fŁf Ł“

4. åØ a »ä çfi

- äi æ a a MP4/GIF a fl 'docs/media/coupled/pandoc_workflow.{mp4,gif}' a ,ä å a a ä Łf a «ä a a f GitHub Pages a çä Wiki a a å ç§a

- a a ja/ a «a µ/ a »a 20 MB a Ł¶ a a å·å a fl 'ffmpeg -crf 28' a “a 'a §å a ma ‡ a ‡ a ...a a a få§çfia

5. a a 'a a «a •a ¥a ...a

- Ø tç»ä»a «a a 'a ‡ a a a ...a a a å·å a fl a a ç a ...a a a «a Ø çfiä i... 100%i... a «a a 'scale=960:-1' a ma a f a ææ „a _a ...a «a §a
- Ø ‡æ ä Łf a “å·å a fl OBS Ł»äi a §a a /a flØ ‡æ çia„å a a ä f a a a «a ,a f a a •a §a ‡ a æå¥a

å ç»a æ%µ a faØ a a a a ma §a æŁf a ja ‡ a a ...a æØ a Łf Łf ç a «ç Ł§£ a a a a “a a ¶ a Ø tç»a a ç æ a fläi æç a «Łf ç·a a