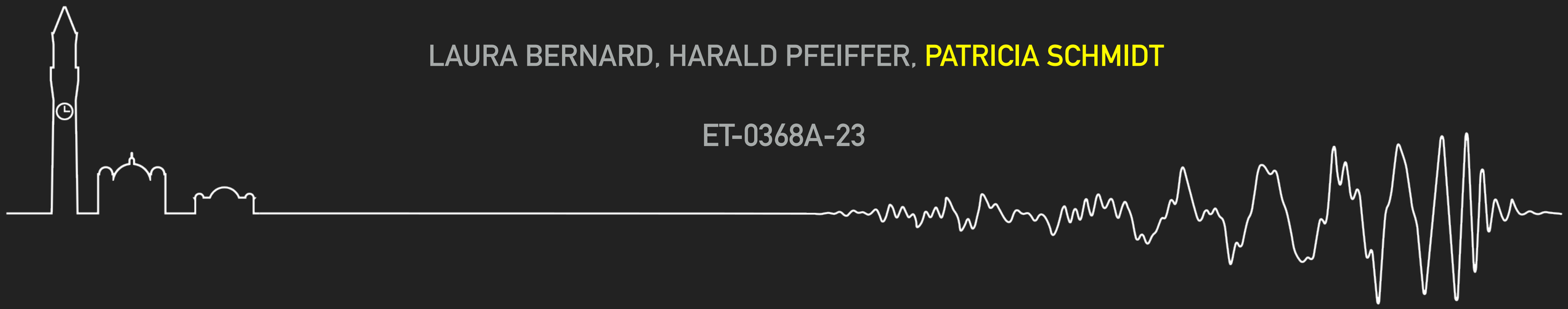
UNIVERSITY OF BIRMINGHAM | GRAVITATIONAL WAVE ASTRONOMY

OSB–DIV8: WAVEFORMS DIVISION STATUS UPDATE

EINSTEIN TELESCOPE ANNUAL MEETING
NOV 14-17, 2023 @ IJC LAB

LAURA BERNARD, HARALD PFEIFFER, PATRICIA SCHMIDT

ET-0368A-23



DIVISION STATUS

- **Monthly call on Tuesday** @ 16:00 CET / 15:00 GMT
  - Average participation: ~20
  - Blue book (standing agenda item)
  - Try to arrange for *at least 1 scientific talk* with priority for ECRs
    - Science talks in the last year include: SEOBNRv5 (L. Pompili), TEOBResumS (A. Nagar), Recent PN developments (D. Trestini), EM fields in compact binaries (F. Larrouturou)
- (NEW) Mattermost channel: https://mattermost.et-gw.eu/et/channels/osb-waveforms
  - FYI: Use your ET credentials to sign in via gitlab
- **Next division call on December 5**
  - Talks: Piero Rettegno (Turin) on BH scattering + ??? Get in touch with the chairs if you would like to present you work!

BLUE BOOK STATUS

- View the waveform section on Overleaf: https://www.overleaf.com/read/vgskyhctxqwx#a4e457
- **Structured in 12 sub-topics**
  - Each with coordinator(s) and contributors
- Charge:
  - 2 pages 'state of the art', 1 page ‘open challenges', 1 page ‘important next steps'
  - See planning document for more details

Contents

BLUE BOOK STATUS

- **Contributions received for each sub-topic**
  - Separate .tex files
  - INSPIRE bibtex keys
  - Currently **45 pages, 850 references**
  - Overall, in good shape:
    - Mostly mature text
    - Style between sub-topics is fairly consistent
    - Few figures
    - Some repetition/overlap

Contents

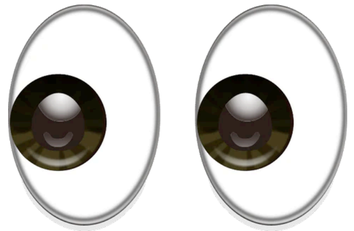
QUICK SURVEY OF DETAILED CONTRIBUTIONS

Section	Title	Coordinator	Present length	Comments
Sec 2	WF Systematics & Accuracy Requirements	Maarten vd Meent	1	Next step and progress outstanding
Sec 3.1	Numerical Relativity	Francois Foucart	4	complete
Sec 3.2	Weak Field Appoximations	Francois Larrouturou & Riccardo Sturani (Div 1)	3	needs Div 1 pass
Sec. 3.3	Gravitational Self Force	Adam Pound	4	complete, no contributors
Sec. 3.4	IMR models	Piero Rettegno	2	include surrogate models
Sec. 3.5	Alternative Theories of Gravity	Jan Steinhoff	2.5	Next steps rather short
Sec. 4.1	BBH waveform models	Geraint Pratten	3.5	some comments to be addressed
Sec. 4.2	BNS waveform models	Alessandro Nagar (+Div 6)	2	Needs to be reword as running text
Sec. 4.3	BHNS waveform models	Tanja Hinderer (also Div 6)	5	complete, very detailed
Sec 4.4	Other modeled sources (CCSNe, early universe)	Adam Burrows & Guillem Domenech	6	Text is rough, doesn't follow required structure; uses ADS bibtex keys. Needs to be homogenised.
Sec 4.5	Waveforms in alternative theories of GR	Hector Okada da Silva (+Div 1)	3.5	several aspects missing
Sec 5	Waveform acceleration	Stefano Schmidt	3	complete

NEXT STEPS

- **Coordinators have been asked to revise their sections**
  - Look at related sections to avoid duplication of material or gaps; add cross-references where useful
  - Consider to adjust length if needed
  - Feel free to add figure (we can have a few more figures, although not in every section)

- **Need to write Introduction + Conclusion**
  - Chairs (Laura, Patricia, Harald) + any **volunteers** who would like to contribute (open call)



- **Need to have an overall smoothing pass**
  - Chairs (Laura, Patricia, Harald) + any **volunteers** who would like to contribute (open call)