2025

Author(s)	Type	Stimulus	Decoding	Notes
Dold et al.	article	modulated Gold codes	reconvolution, CCA	Dareplane, experiment platform
Dong, Zheng, Pei, Gao, and Wang	article	NBRS	EEG2Code	240 classes
Fodor, Canturk, Le, Heisenberg, and Volosyak	proceedings	m-sequence	CCA	class augmentation
Fodor, Cantürk, Heisenberg, and Volosyak	article	m-sequence	CCA	number of electrodes, montage
Fodor and Volosyak	proceedings	m-sequence	GAT-CNN	Deep learning, multi-head attention and graph neural net, electrode importance
Fodor and Volosyak	proceedings	m-sequence	SVM, CNN	imperceptible stimulation with 60 Hz carrier
Gomel, Torre Tresols, Cimarost, Cabrera Castillo, and Dehais	proceedings	burst codes	xDAWN and Riemannian	dry EEG, invisible stimuli
Gomel, Torre Tresols, Cimarost, Cabrera Castillo, and Dehais	proceedings	burst codes	xDAWN, LDA	confidence feedback
Guyonnet-Hencke et al.	article	Gold code	CCA	auditory hearing diagnostics
Kiser, Cantürk, and Volosyak	proceedings	m-sequence	CCA	authentication
Le, Fodor, Cantürk, and Volosyak	proceedings	m-sequence	CCA	authentication
Martín-Fernández, Martínez-Cagigal, Moreno-Calderón, Santamaría-Vázquez, and Hornero	article	m-sequence	CCA	stimulus opacity
Martín-Fernández, Martínez-Cagigal, Moreno-Calderón, Santamaría-Vázquez, Pascual-Roa, and Hornero	proceedings	m-sequence	CCA	realistic background and opacity
Martínez-Cagigal, Thielen, Hornero, and Desain	article			Editorial c-VEP
Martínez-Cagigal et al.	proceedings	m-sequence	CCA	asynchronous, early stopping
Martínez-Cagigal, Santamaría-Vázquez, Pérez-Velasco, Martín-Fernández, and Hornero	article	binary and non-binary m-sequence	CCA	binary and non-binary codes, spatial frequency, calibration time, comfort
Moreno-Calderón, Martínez-Cagigal, Martín-Fernández, Santamaría-Vázquez, Pascual-Roa, and Hornero	proceedings	m-sequence	CCA	mixed reality versus screen

Moreno-Calderón, Martínez-Cagigal, Martín-Fernández, Santamaría-Vázquez, and Hornero	article	m-sequence	CCA	mixed reality versus screen
Nair and Cecotti	preprint	m-sequence	CCA, Bayesian LDA, CNN	deep learning, siamese network
Santamaría-Vázquez et al.	proceedings			calibration-free, deep learning
Scheppink, Cantürk, and Volosyak	proceedings	m-sequence	CCA	scene/object based stimulation
Tangermann et al.	article			review learning from small datasets
Thielen, Tangermann, Aarnoutse, Ramsey, and Vansteensel	article	modulated Gold codes	reconvolution, CCA	implanted, invasive, sEEG
Thielen	article	m-sequence, de Bruijn sequence, Golay sequence, Gold sequence, Gold code set, modulated	reconvolution, CCA	BCI inefficiency, performance predictors, binary stimulus sequences
Thielen	dataset	m-sequence, de Bruijn sequence, Golay sequence, Gold sequence, Gold code set, modulated		binary stimulus sequences, EEG, ECG, SART, resting-state
Vodila, van Lohuizen, and Thielen	proceedings	modulated Gold codes	reconvolution CCA	gaze-independent, covert attention, alpha, ERP, c-VEP
Yu, Rao, Chen, Liu, and Jiang	article	Gold code	DBFENet, EEGNet, etc.	Robot arm, scene segmentation, deep learning
Zheng, Dong, Pei, Gao, and Wang	preprint	NBRS	FBCCA	calibration-free, 504 targets

2024

Author(s)	Type	Stimulus	Decoding	Notes
Ahmadi, Desain, and Thielen	article	modulated Gold codes	reconvolution, CCA	Bayesian dynamic stopping
Cantürk and Volosyak	proceedings	m-sequence	CCA	language model (ChatGPT)
Cabrera Castillos and Dehais	dataset	burst codes		grating stimuli
Dehais, Castillos, Ladouce, and Clisson	article	burst codes	Riemannian, logistic regression	grating stimuli, dry EEG, comfort, eye-strain
Fodor, Herschel, Cantürk, Heisenberg, and Volosyak	article	m-sequence	CCA	classification certainty feedback
C. Huang et al.	article	white noise	TRCA	visual tracking
E. Lai, Mai, Ji, Li, and Meng	proceedings	DIBS	filterbank task related component analysis (FBTRCA), LSTM	asynchronous
Martínez-Cagigal, Álvaro Fernández-Rodríguez, Santamaría-Vázquez, Martín-Fernández, and Hornero	proceedings	non-binary m-sequence	CCA	learning curve
Y. Miao et al.	article	white noise	TDCA, linear modeling, transfer learning	minimal calibration, subject-to-subject transfer
Z. Miao, Meunier, Žák, and Grosse-Wentrup	proceedings	m-sequence	EEG2Code, EEGNet, ShallowConvNet, DeepConvNet, ShallowNet	deep learning, transfer-learning, fine-tuning
Narayanan, Ahmadi, Desain, and Thielen	proceedings	modulated Gold codes	CCA	gaze-independent, covert attention
Qu et al.	article	m-sequence	CCA	biometrics
Scheppink, Ahmadi, Desain, Tangermann, and Thielen	proceedings	modulated Gold codes	CCA	auditory, c-AEP
Shi et al.	article	white-noise	TDCA	maximum information rate
Sun et al.	article	m-sequence	TDCA	small stimuli (0.5, 1, 2, 3 visual degrees)
Thielen, Sosulski, and Tangermann	proceeding	modulated Gold codes	reconvolution, CCA, UMM	calibration-free, instantaneous, cumulative
Thielen, Farquhar, and Desain	dataset	modulated Gold codes		
Velut, Chevallier, Corsi, and Dehais	proceedings	burst codes	CNN, SPDNet, transfer learning	subject-to-subject transfer
Zheng, Dong, et al.	article	NBRS	FBCCA	calibration-free, c-VEP versus SSVEP
Zheng, Tian, et al.	dataset	NBRS		c-VEP versus SSVEP

2023

Author(s)	Type	Stimulus	Decoding	Notes
Ahmadi and Desain	preprint	modulated Gold codes	CCA	Bayesian dynamic stopping
Cabrera Castillos, Ladouce, Darmet, and Dehais	article	m-sequence, burst codes	CNN	
Cabrera Castillos	dataset	m-sequence, burst codes		
Darmet, Ladouce, and Dehais	proceedings	m-sequence	TRCA, EEG2Code, CNN	
Fernández-Rodríguez, Martínez-Cagigal, Santamaría-Vázquez, Ron-Angevin, and Hornero	article	m-sequence	CCA	Eyestrain spatial frequency
Henke et al.	proceedings	m-sequence	CCA	Background music
Z. Huang, Liao, Ou, Chen, and Zhang	article	m-sequence	Combined EEGNet	Biometrics
E. Lai, Mai, and Meng	proceedings	DIBS	FBTRCA, LSTM	fatigue
Martínez-Cagigal et al.	article	m-sequence, non-binary m-sequences	CCA	Eyestrain, fatigue
Martínez-Cagigal, Santamaría-Vázquez, and Hornero	proceedings	non-binary m-sequence	CCA	Dynamic stopping
Moreno-Calderón et al.	article	m-sequence	CCA	Games
Santamaría-Vázquez, Martínez-Cagigal, and Hornero	proceedings	non-binary m-sequence,	EEG-inception	
Thielen	proceedings	m-sequence, APA sequence, Gold codes, Golay sequence, de Bruijn sequence	reconvolution, CCA	Simulated EEG
Thielen, Cornielje, van der Werff, and Desain	proceedings	m-sequence, Gold codes, Golay sequence, de Bruijn sequence, modulated codes	reconvolution, CCA	Empirical EEG
Thielen, Marsman, Farquhar, and Desain	dataset	modulated Gold codes		
Volosyak et al.	proceedings	m-sequence	CCA	Gender
Wolf and Götzelmann	article			VEPdgets, Dry EEG
Xu et al.	article	m-sequence	TRCA	c-VEP versus SSVEP

2022

Author(s)	Type	Stimulus	Decoding	Notes
Dehais et al.	article			Dry EEG, flight simulator, active and passive BCI
Stawicki and Volosyak	article	m-sequence	transfer learning	Session-to-session transfer
Sun, Zheng, Pei, Gao, and Wang	article	shifted Gold code	FBTRCA	120 targets
Ying, Wei, and Zhou	article	m-sequence	Riemannian, transfer learning	Subject-to-subject transfer
Zarei and Asl	article	m-sequence	spatiotemporal beamformer	
Zarei and Asl	article	m-sequence	spatiotemporal beamformer	Improved covariance estimator
Zheng, Pei, Gao, Zhang, and Wang	article	Gold codes	TRCA	Brain-switch

2021

Author(s)	Type	Stimulus	Decoding	Notes
Kaya, Bohorquez, and Özdamar	article	quasi steady-state	CLAD	
Martínez-Cagigal et al.	article			Review c-VEP
Thielen, Marsman, Farquhar, and Desain	article	modulated Gold codes	reconvolution, CCA	Zero-training
Torres and Daly	article	APA sequence, de Bruijn sequence, Golay sequence, m-sequence, Gold code, Kasami sequence	CCA, ICA, PCA, MLP	Synthetic EEG
Verbaarschot et al.	article	modulated Gold codes	CCA	ALS versus healthy participants

2020

Author(s)	Type	Stimulus	Decoding	Notes
Behboodi, Mahnam, Marateb, and Rabbani	article	m-sequence, TFO, 6FO	CCA	
Gembler, Rezeika, Benda, and Volosyak	article	m-sequence, quintary m-sequence	FBCCA	Presentation rate (60, 120, 240), comfort
Gembler, Benda, Rezeika, Stawicki, and Volosyak	article	m-sequence	CCA	Asynchronous, language model
Gembler	dissertation			c-VEP
Gembler, Stawicki, Rezeika, Benda, and Volosyak	proceedings	m-sequence	FBCCA	Asynchronous, multi-session
Z. Huang, Zheng, Wu, and Wang	article	m-sequence	transfer-learning	Subject-to-subject transfer
Volosyak, Rezeika, Benda, Gembler, and Stawicki	article	m-sequence	CCA	SSVEP, SSMVEP, c-VEP, BCI illiteracy
Shirzhiyan et al.	article	periodic, quasi-periodic, chaotic codes	CCA	Fatigue
Turi, Gayraud, and Clerc	article	m-sequence	CCA	Auto-calibration, language model, zero training
Yasinzai and Ider	article	m-sequence, random sequence, SOP sequences	CCA	

2019

Author(s)	Type	Stimulus	Decoding	Notes
Ahmadi	dataset	modulated Gold codes		
Ahmadi	dataset	modulated Gold codes		
Ahmadi, Borhanazad, Tump, Farquhar, and Desain	proceedings	modulated Gold codes	CCA	Number of electrodes, montage
Ahmadi, Borhanazad, Tump, Farquhar, and Desain	article	modulated Gold codes	CCA	Number of electrodes, montage
Başaklar, Tuncel, and İder	article	m-sequence	CCA	Presentation rate (60, 120, 240 Hz)
Borhanazad, Thielen, Farquhar, and Desain	proceedings	modulated Gold codes	CCA	Presentation rate (40, 60, 90, 120 Hz)
Desain, Thielen, van den Broek, and Farquhar	patent	modulated Gold codes	CCA	
Gembler and Volosyak	article	m-sequence	CCA	Language model
Gembler, Stawicki, Rezeika, and Volosyak	proceedings	m-sequence	FBCCA	Presentation rate (30, 60, 120 Hz), age (young, elderly)
Gembler, Stawicki, Saboor, and Volosyak	article	m-sequence	FBCCA	Language model, dynamic stopping
Gembler, Benda, Saboor, and Volosyak	proceedings	m-sequence	FBCCA	Language model, dynamic stopping
Grigoryan, Filatov, and Kaplan	article	m-sequence	CCA	Presentation rate (30, 60, 120 Hz)
Kadıoğlu, Yıldız, Closas, Fried-Oken, and Erdoğmuş	article	m-sequence	Maximum likelihood	Color (green-red), fusion of c-VEP and eye tracker
Kaya, Bohorquez, and Ozdamar	proceedings	quasi steady-state	CLAD	QSSVEP
Kaya, Bohórquez, and Özdamar	article	quasi steady-state	CLAD	QSSVEP
Kaya	dissertation			QSSVEP
Luo and Huang	proceedings	m-sequence	LDA, transfer learning	Subject-to-subject transfer
Matsuno, Itakura, Mizuno, and Mito	proceedings			frequency-hopping VEP
Nagel and Spüler	article	optimized random sequences	EEG2Code	Asynchronous, non-control state
Nagel and Spüler	article	random sequences	EEG2Code	
Nagel	dissertation			c-VEP
Peng and Huang	proceedings	m-sequence	sLDA	For psychological experiments (button presses without behavior)
Shirzhiyan et al.	article	m-sequence, chaotic codes	CCA, spatiotemporal beam-forming	Fatigue
Turi and Clerc	article	m-sequence		Static stopping number of cycles
Zhao, Wang, Liu, Pei, and Chen	article	m-sequence	FBCCA. FBTRCA	Biometrics
Zheng, Wang, Pei, and Chen	proceedings	Gold codes	TRCA	Brain switch

2018

Author(s)	Type	Stimulus	Decoding	Notes
Başaklar, İder, and Tuncel	proceedings	m-sequence		Presentation rate (60, 120, 240 Hz)
Dimitriadis and Marimpis	article	m-sequence	SVM	PAC, healthy and patients
Gembler, Stawicki, Saboor, et al.	proceedings	m-sequence	CCA	Presentation rate (60, 120, 200 Hz)
Gembler, Stawicki, Rezeika, et al.	proceedings	m-sequence	CCA	Language model
Liu, Wei, and Lu	article	Golay sequence, APA sequence	CCA	
Nagel, Dreher, Rosenstiel, and Spüler	article	m-sequence		Monitor raster latency, P300, SSVEP, c-VEP
Nagel, Rosenstiel, and Spüler	proceedings	optimized random sequences	CCA, regression	
Nagel and Spüler	article	random and optimized sequences	Ridge regression, EEG2Code	
Nezamfar, Mohseni Salehi, Higger, and Erdogmus	article	m-sequence	RDA	Color (green-red), c-VEP versus eye tracker
Spüler and Kurek	article	m-sequence	CCA, SVM	ASSR versus c-AEP
Turi, Gayraud, and Clerc	preprint	m-sequence		Zero-training, language model
Wei et al.	article	grouping modulation, Golay complementary sequences, APA sequence	CCA	

2017

Author(s)	Type	Stimulus	Decoding	Notes
Aminaka and Rutkowski	chapter	m-sequence	CCA, SVM	Color (green-blue), 40 Hz
Isaksen, Mohebbi, and Puthusserypady	article	m-sequence, Gold code, Barker code	correlation	
Nagel, Rosenstiel, and Spüler	proceedings	m-sequence, random codes	CCA	
Spüler	article	m-sequence	CCA	Dry EEG, static and dynamic stopping
Thielen, Marsman, Farquhar, and Desain	chapter	modulated Gold codes	reconvolution, CCA	Zero-training
Wei, Gong, and Lu	article	grouping modulation, Golay sequence, APA sequence	CCA	
Wittevrongel, Van Wolputte, and Van Hulle	article	m-sequence	beamformer	

2016

Author(s)	Type	Stimulus	Decoding	Notes
Desain, Thielen, van den Broek, and Farquhar	patent	modulated Gold codes	CCA	
Isaksen, Mohebbi, and Puthusserypady	proceedings	m-sequence	Barker code, Gold code	
Nezamfar, Salehi, Moghadamfalahi, and Erdogmus	article	m-sequence		FlashType, color (red-green), 110 Hz, language model
Riechmann, Finke, and Ritter	article	m-sequence	SVM (linear)	Color (green-red, black-white), shape, background, 120 Hz, virtual agent
Sato and Washizawa	proceedings	m-sequence	CCA, MLP, Lasso regression, Linear regression	
Thielen, Farquhar, and Desain	proceedings	modulated Gold codes	reconvolution, CCA	
Wei, Feng, and Lu	article	m-sequence	CCA	Stimulus characteristics: size (0.67, 1.7, 2.8, 3.8, 5.4, 7.1, 8.9 dva), color (white, red, green, blue, yellow), proximity (3.8, 4.8, 5.8, 6.8 dva), length (15, 31, 63, 127 bits), lag (2, 4, 6, 8, 10 bits)
Wei, Huang, Li, and Lu	article	m-sequence, Golay sequence	CCA	

2015

Author(s)	Type	Stimulus	Decoding	Notes
Aminaka, Makino, and Rutkowski	proceedings	m-sequence	CCA	Color (green-blue, white-black), presentation rate (30, 40 Hz)
Aminaka, Makino, and Rutkowski	proceedings	m-sequence	CCA, SVM	Color (green-blue, white-black), presentation rate (30, 40 Hz), CCA versus SVM
Aminaka, Makino, and Rutkowski	proceedings	m-sequence	SVM	Color (green-blue, white-black), presentation rate (30, 40 Hz), pass-band optimization (6-21 Hz)
Aminaka, Makino, and Rutkowski	proceedings	m-sequence	SVM	Color (green-blue, white-black), presentation rate (30, 40 Hz), SVM (linear, polynomial, rbf, sigmoid)
Mohebbi et al.	proceedings	Gold code	correlation	Wheelchair
Nezamfar, Salehi, and Erdogmus	proceedings	m-sequence	maximum likelihood	Color (red-green, blue-yellow, black-white), presentation rate (30, 60, 110 Hz)
Sato and Washizawa	proceedings	m-sequence	correlation	Automatic repeat request
Spüler	proceedings	m-sequence	CCA, SVM	Windows applications
Thielen, van den Broek, Farquhar, and Desain	article	modulated Gold codes	reconvolution, CCA	
Waytowich and Krusienski	article	m-sequence	CCA	Foveal versus peripheral stimulation

2014

Author(s)	Type	Stimulus	Decoding	Notes
Kapeller et al.	article	m-sequence	CCA, LDA	Invasive, video application
Tu et al.	article		CSP, SVM, Naive Bayes, LDA	Color (red-green), CTVEP

2013

Author(s)	Type	Stimulus	Decoding	Notes
Bohórquez, Lozano, Kao, Toft-Nielsen, and Özdamar	proceedings	temporally jittered SSVEP	CLAD	
Kapeller et al.	proceedings	m-sequence	CCA, LDA	Robot, SSVEP versus c-VEP
Riechmann, Finke, and Ritter	proceedings	hierarchical codebook	SVM	Color (red-green, black-white)
Spüler, Rosenstiel, and Bogdan	proceedings	m-sequence	OCSVM,	Unsupervised online calibration
Spüler, Rosenstiel, and Bogdan	proceedings	m-sequence	OCSVM	Unsupervised online calibration
Spüler, Walter, Rosenstiel, and Bogdan	article	m-sequence	CCA, OCSVM	c-VEP, ERN, P300, TMSEP, CCEP

2012

Author(s)	Type	Stimulus	Decoding	Notes
Nakanishi and Mitsukura	proceedings	m-sequence, periodic codes	periodicity detection	
Spüler, Rosenstiel, and Bogdan	proceedings	m-sequence	CCA, OCSVM	
Spüler, Rosenstiel, and Bogdan	article	m-sequence	CCA, OCSVM	Online unsupervised adaptation with ERN

2011

Author(s)	Type	Stimulus	Decoding	Notes
Bin et al.	article	m-sequence	CCA	
S. M. Lai, Zhang, Hung, Niu, and Chang	article			Color (red-green), CTVEP
Nezamfar, Orhan, Purwar, et al.	article	m-sequence	template matching, Bayesian fusion	
Nezamfar, Orhan, Erdogmus, et al.	proceedings	m-sequence	correlation, naive Bayes	Presentation rate (15, 30 Hz)

2009

Author(s)	Type	Stimulus	Decoding	Notes
Bin, Gao, Wang, Hong, and Gao	article	m-sequence	correlation	ERP versus SSVEP versus c-VEP

2008

Author(s)	Type	Stimulus	Decoding	Notes
Desain, Farquhar, Blankespoor, and Gielen	proceedings	Gold codes	reconvolution	Auditory
Farquhar, Blankespoor, Vlek, and Desain	proceedings	Gold codes		Auditory
Momose	proceedings	m-sequence		Hybrid P300 and c-VEP

2007

Author(s)	Type	Stimulus	Decoding	Notes
Momose	proceedings	m-sequence		

2006

Author(s)	Type	Stimulus	Decoding	Notes
Bohórquez and Özdamar	article	m-sequence	CLAD	Auditory

2002

Author(s)	Type	Stimulus	Decoding	Notes
Hanagata and Momose	proceedings			

1992

Author(s)	Type	Stimulus	Decoding	Notes
Sutter	article	m-sequence	correlation	Invasive, ALS patient

1984

Author(s)	Type	Stimulus	Decoding	Notes
Sutter	proceedings			

References

Ahmadi, S. (2019a). *High density EEG measurment*. Radboud University. Retrieved from https://doi.org/10.34973/psaf-mq72 doi: 10.34973/psaf-mq72

Ahmadi, S. (2019b). *Sensor tying*. Radboud University. Retrieved from https://doi.org/10.34973/ehq6-b836 doi: 10.34973/ehq6-b836

Ahmadi, S., Borhanazad, M., Tump, D., Farquhar, J., & Desain, P. (2019a). Low channel count montages using sensor tying for VEP-based BCI. *Journal of Neural Engineering*, *16*, 066038. Retrieved from https://doi.org/10.1088/1741-2552/ab4057 doi: 10.1088/1741-2552/ab4057

Ahmadi, S., Borhanazad, M., Tump, D., Farquhar, J., & Desain, P. (2019b). Sensor tying, optimal montages for VEP-based BCI. In *8th Graz Brain-Computer Interface Conference 2019* (pp. 27–31). Retrieved from https://doi.org/10.3217/978-3-85125-682-6-06 doi: 10.3217/978-3-85125-682-6-06

Ahmadi, S., & Desain, P. (2023). A model-based dynamic stopping method for c-VEP BCI. In N. Mrachacz-Kersting, J. Collinger, D. Mattia, D. Valeriani, M. Vansteensel, & G. Müller-Putz (Eds.), *Proceedings of the 10th International Brain-Computer Interface Meeting 2023: Balancing Innovation and Translation*. Retrieved from https://doi.org/10.3217/978-3-85125-962-9-168 doi: 10.3217/978-3-85125-962-9-168

Ahmadi, S., Desain, P., & Thielen, J. (2024). A bayesian dynamic stopping method for evoked response brain-computer interfacing. *Frontiers in Human Neuroscience*, *18*. Retrieved from https://doi.org/10.3389/fnhum.2024.1437965 doi: 10.3389/fnhum.2024.1437965

Aminaka, D., Makino, S., & Rutkowski, T. M. (2015a). Chromatic and high-frequency cVEP-based BCI paradigm. In *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 1906–1909). Retrieved from https://doi.org/10.1109/EMBC.2015.7318755 doi: 10.1109/EMBC.2015.7318755

Aminaka, D., Makino, S., & Rutkowski, T. M. (2015b). Classification accuracy improvement of chromatic and high–frequency code–modulated visual evoked potential–based BCI. In *International Conference on Brain Informatics and Health* (pp. 232–241). Retrieved from https://doi.org/10.1007/978-3-319-23344-4_23 doi: 10.1007/978-3-319-23344-4_23

Aminaka, D., Makino, S., & Rutkowski, T. M. (2015c). EEG filtering optimization for code–modulated chromatic visual evoked potential–based brain–computer interface. In *International Workshop on Symbiotic Interaction* (pp. 1–6). Retrieved from https://doi.org/10.1007/978-3-319-24917-9_1 doi: 10.1007/978-3-319-24917-9_1

Aminaka, D., Makino, S., & Rutkowski, T. M. (2015d). SVM classification study of code-modulated visual evoked potentials. In *2015 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA)* (pp. 1065–1070). Retrieved from https://doi.org/10.1109/APSIPA.2015.7415435 doi: 10.1109/APSIPA.2015.7415435

Aminaka, D., & Rutkowski, T. M. (2017). A sixteen-command and 40 Hz carrier frequency code-modulated visual evoked potential BCI. In *Brain-Computer Interface Research* (pp. 97–104). Springer. Retrieved from https://doi.org/10.1007/978-3-319-64373-1_10 doi: 10.1007/978-3-319-64373-1_10

Başaklar, T., İder, Y. Z., & Tuncel, Y. (2018). Effects of high stimulus presentation rate on c-VEP based BCIs. In *2018 Medical Technologies National Congress (TIPTEKNO)* (pp. 1–4). Retrieved from https://doi.org/10.1088/2057-1976/ab0cee doi: 10.1088/2057-1976/ab0cee

Başaklar, T., Tuncel, Y., & İder, Y. Z. (2019). Effects of high stimulus presentation rate on EEG template characteristics and performance of c-VEP based BCIs. *Biomedical Physics & Engineering Express*, *5*, 035023. Retrieved from https://doi.org/10.1088/2057-1976/ab0cee doi: 10.1088/2057-1976/ab0cee

Behboodi, M., Mahnam, A., Marateb, H., & Rabbani, H. (2020). Optimization of visual stimulus sequence in a brain-computer interface based on code modulated visual evoked potentials. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, *28*(12), 2762–2772. Retrieved from https://doi.org/10.1109/TNSRE.2020.3044947 doi: 10.1109/TNSRE.2020.3044947

Bin, G., Gao, X., Wang, Y., Hong, B., & Gao, S. (2009). VEP-based brain-computer interfaces: time, frequency, and code modulations. *IEEE Computational Intelligence Magazine*, *4*(4), 22–26. Retrieved from https://doi.org/10.1109/MCI.2009.934562 doi: 10.1109/MCI.2009.934562

Bin, G., Gao, X., Wang, Y., Li, Y., Hong, B., & Gao, S. (2011). A high-speed BCI based on code modulation VEP. *Journal of Neural Engineering*, *8*(2), 025015. Retrieved from https://doi.org/10.1088/1741-2560/8/2/025015 doi: 10.1088/1741-2560/8/2/025015

Bohórquez, J., Lozano, S., Kao, A., Toft-Nielsen, J., & Özdamar, Ö. (2013). Deconvolution and modeling of overlapping visual evoked potentials. In *2013 29th southern biomedical engineering conference* (pp. 31–32). Retrieved from https://doi.org/10.1109/SBEC.2013.24 doi: 10.1109/SBEC.2013.24

Bohórquez, J., & Özdamar, Ö. (2006). Signal to noise ratio analysis of maximum length sequence deconvolution of overlapping evoked potentials. *The Journal of the Acoustical Society of America*, *119*(5), 2881–2888. Retrieved from https://doi.org/10.1121/1.2191609 doi: 10.1121/1.2191609

Borhanazad, M., Thielen, J., Farquhar, J., & Desain, P. (2019). The effect of high and low frequencies in c-VEP BCI. In *8th Graz Brain-Computer Interface Conference 2019* (pp. 128–132). Retrieved from https://doi.org/10.3217/978-3-85125-682-6-24 doi: 10.3217/978-3-85125-682-6-24

Cabrera Castillos, K. (2023). *4-class code-VEP EEG data.* Zenodo. Retrieved from https://doi.org/10.5281/zenodo.8255618 doi: 10.5281/zenodo.8255618

Cabrera Castillos, K., & Dehais, F. (2024). *5-class burst c-VEP with dry EEG.* Zenodo. Retrieved from https://doi.org/10.5281/zenodo.13838406 doi: 10.5281/zenodo.13838406

Cabrera Castillos, K., Ladouce, S., Darmet, L., & Dehais, F. (2023). Burst c-VEP based BCI: Optimizing stimulus design for enhanced classification with minimal calibration data and improved user experience. *NeuroImage*, *284*, 120446. Retrieved from https://doi.org/10.1016/j.neuroimage.2023.120446 doi: 10.1016/j.neuroimage.2023.120446

Cantürk, A., & Volosyak, I. (2024). A novel ChatGPT-driven communication aid based on code-modulated visual evoked potentials (cVEP). In *9th graz brain-computer interface conference 2024* (pp. 41–46). Retrieved from https://doi.org/10.3217/978-3-99161-014-4-008 doi: 10.3217/978-3-99161-014-4-008

Darmet, L., Ladouce, S., & Dehais, F. (2023). Shortened calibration of code-VEP based BCI by improved deep learning architecture and golden subjects pre-training. In *11th International IEEE EMBS Conference on Neural Engineering*. Retrieved from https://hal.science/hal-03984091/

Dehais, F., Castillos, K. C., Ladouce, S., & Clisson, P. (2024). Leveraging textured flickers: a leap toward practical, visually comfortable, and high-performance dry EEG code-VEP BCI. *Journal of Neural Engineering*, *21*(6), 066023. Retrieved from https://doi.org/10.1088/1741-2552/ad8ef7 doi: 10.1088/1741-2552/ad8ef7

Dehais, F., Ladouce, S., Darmet, L., Nong, T.-V., Ferraro, G., Torre Tresols, J., … Labedan, P. (2022). Dual passive reactive brain-computer interface: A novel approach to human-machine symbiosis. *Frontiers in Neuroergonomics*, *3*, 824780. Retrieved from https://doi.org/10.3389/fnrgo.2022.824780 doi: 10.3389/fnrgo.2022.824780

Desain, P., Farquhar, J., Blankespoor, J., & Gielen, S. (2008). Detecting spread spectrum pseudo random noise tags in EEG/MEG using a structure-based decomposition. In *4th International Brain-Computer Interface Workshop and Training Course 2008*. Retrieved from https://www.tugraz.at/fileadmin/user_upload/Institute/INE/Proceedings/Proceedings_BCI_Conference_2008.pdf

Desain, P., Thielen, J., van den Broek, P., & Farquhar, J. (2016). *Brain computer interface using broadband evoked potentials.* Google Patents. Retrieved from https://patents.google.com/patent/WO2016012390A1/en (US Patent App. 15/328,083)

Desain, P., Thielen, J., van den Broek, P., & Farquhar, J. (2019). *Brain computer interface using broadband evoked potentials.* Google Patents. (US Patent App. 10/314,508)

Dimitriadis, S. I., & Marimpis, A. D. (2018). Enhancing performance and bit rates in a brain–computer interface system with phase-to-amplitude cross-frequency coupling: evidences from traditional c-VEP, fast c-VEP, and SSVEP designs. *Frontiers in Neuroinformatics*, *12*. Retrieved from https://doi.org/10.3389/fninf.2018.00019 doi: 10.3389/fninf.2018.00019

Dold, M., Pereira, J., Sajonz, B., Coenen, V. A., Thielen, J., Janssen, M., & Tangermann, M. (2025). Dareplane: a modular open-source software platform for BCI research with application in closed-loop deep brain stimulation. *Journal of Neural Engineering*, *22*, 026029. Retrieved from https://doi.org/10.1088/1741-2552/adbb20 doi: 10.1088/1741-2552/adbb20

Dong, Y., Zheng, L., Pei, W., Gao, X., & Wang, Y. (2025). A 240-target VEP-based BCI system employing narrow-band random sequences. *Journal of Neural Engineering*, 22(2), 026024. Retrieved from https://doi.org/10.1088/1741-2552/adbfc1 doi: 10.1088/1741-2552/adbfc1

Farquhar, J., Blankespoor, J., Vlek, R., & Desain, P. (2008). Towards a noise-tagging auditory BCI-paradigm. In *4th International Brain-Computer Interface Workshop and Training Course 2008*. Retrieved from https://www.tugraz.at/fileadmin/user_upload/Institute/INE/Proceedings/Proceedings_BCI_Conference_2008.pdf

Fernández-Rodríguez, Á., Martínez-Cagigal, V., Santamaría-Vázquez, E., Ron-Angevin, R., & Hornero, R. (2023). Influence of spatial frequency in visual stimuli for cVEP-based BCIs: evaluation of performance and user experience. *Frontiers in Human Neuroscience*, *17*. Retrieved from https://doi.org/10.3389/fnhum.2023.1288438 doi: 10.3389/fnhum.2023.1288438

Fodor, M., Cantürk, A., Heisenberg, G., & Volosyak, I. (2025). Streamlining cVEP paradigms: Effects of a minimized electrode montage on brain–computer interface performance. *Brain Sciences*, *15*(6), 549. Retrieved from https://doi.org/10.3390/brainsci15060549 doi: 10.3390/brainsci15060549

Fodor, M., Canturk, A., Le, T.-P.-N., Heisenberg, G., & Volosyak, I. (2025). Evaluation of efficient and performance-retaining cVEP-BCI class augmentation. In *2025 13th international conference on brain-computer interface (bci)* (pp. 1–6). Retrieved from https://doi.org/10.1109/BCI65088.2025.10931291 doi: 10.1109/BCI65088.2025.10931291

Fodor, M., Herschel, H., Cantürk, A., Heisenberg, G., & Volosyak, I. (2024). Evaluation of different visual feedback methods for brain—computer interfaces (BCI) based on code-modulated visual evoked potentials (cVEP). *Brain Sciences*, *14*(8), 846. Retrieved from https://doi.org/10.3390/brainsci14080846 doi: 10.3390/brainsci14080846

Fodor, M., & Volosyak, I. (2025a). Graph-attentive CNN for cVEP-BCI with insights into electrode significance. In *International work-conference on artificial neural networks* (pp. 558–571). Retrieved from https://doi.org/10.1007/978-3-032-02728-3_45 doi: 0.1007/978-3-032-02728-3_45

Fodor, M., & Volosyak, I. (2025b). Towards visual-fatigue-free BCI with imperceptible visual evoked potentials (I-VEP). In *2025 ieee international conference on systems, man, and cybernetics (smc)* (pp. 3812–3818). Retrieved from https://doi.org/10.1109/SMC58881.2025.11343413 doi: 10.1109/SMC58881.2025.11343413

Gembler, F. (2020). *Parameter optimization for brain-computer interfaces based on visual evoked potentials* (Unpublished doctoral dissertation). Universität Bielefeld.

Gembler, F., Benda, M., Rezeika, A., Stawicki, P. R., & Volosyak, I. (2020). Asynchronous c-VEP communication tools—efficiency comparison of low-target, multi-target and dictionary-assisted BCI spellers. *Scientific Reports*, *10*(1), 1–13. Retrieved from https://doi.org/10.1038/s41598-020-74143-4 doi: 10.1038/s41598-020-74143-4

Gembler, F., Benda, M., Saboor, A., & Volosyak, I. (2019). A multi-target c-VEP-based BCI speller utilizing n-gram word prediction and filter bank classification. In *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)* (pp. 2719–2724). Retrieved from https://doi.org/10.1109/SMC.2019.8914235 doi: 10.1109/SMC.2019.8914235

Gembler, F., Rezeika, A., Benda, M., & Volosyak, I. (2020). Five shades of grey: Exploring quintary m-sequences for more user-friendly c-VEP-based BCIs. *Computational Intelligence and Neuroscience*, *2020*. Retrieved from https://doi.org/10.1155/2020/7985010 doi: 10.1155/2020/7985010

Gembler, F., Stawicki, P., Rezeika, A., Benda, M., & Volosyak, I. (2020). Exploring session-to-session transfer for brain-computer interfaces based on code-modulated visual evoked potentials. In *2020 ieee international conference on systems, man, and cybernetics (smc)* (pp. 1505–1510). Retrieved from https://doi.org/10.1109/SMC42975.2020.9282826 doi: 10.1109/SMC42975.2020.9282826

Gembler, F., Stawicki, P., Rezeika, A., Saboor, A., Benda, M., & Volosyak, I. (2018). Effects of monitor refresh rates on c-VEP BCIs. In *International Workshop on Symbiotic Interaction* (pp. 53–62). Retrieved from https://doi.org/10.1007/978-3-319-91593-7_6 doi: 10.1007/978-3-319-91593-7_6

Gembler, F., Stawicki, P., Rezeika, A., & Volosyak, I. (2019). A comparison of cVEP-based BCI-performance between different age groups. In *International Work-Conference on Artificial Neural Networks* (pp. 394–405). Retrieved from https://doi.org/10.1007/978-3-030-20521-8_33 doi: 10.1007/978-3-030-20521-8_33

Gembler, F., Stawicki, P., Saboor, A., Benda, M., Grichnik, R., Rezeika, A., & Volosyak, I. (2018). A dictionary driven mental typewriter based on code-modulated visual evoked potentials (cVEP). In *2018 IEEE International Conference on Systems, Man, and Cybernetics (SMC)* (pp. 619–624). Retrieved from https://doi.org/10.1109/SMC.2018.00114 doi: 10.1109/SMC.2018.00114

Gembler, F., Stawicki, P., Saboor, A., & Volosyak, I. (2019). Dynamic time window mechanism for time synchronous VEP-based BCIs—performance evaluation with a dictionary-supported BCI speller employing SSVEP and c-VEP. *PLOS One*, *14*(6), e0218177. Retrieved from https://doi.org/10.1371/journal.pone.0218177 doi: 10.1371/journal.pone.0218177

Gembler, F., & Volosyak, I. (2019). A novel dictionary-driven mental spelling application based on code-modulated visual evoked potentials. *Computers*, *8*(2). Retrieved from https://doi.org/10.3390/computers8020033 doi: 10.3390/computers8020033

Gomel, J., Torre Tresols, J., Cimarost, P., Cabrera Castillo, K., & Dehais, F. (2025a). Pre-decision feedback in code-modulated visual evoked potentials brain-computer interface for an 11-class keypad typing task. In *2025 ieee international conference on systems, man, and cybernetics (smc)* (pp. 3800–3805). Retrieved from https://

doi.org/10.1109/SMC58881.2025.11342868 doi: 10.1109/SMC58881.2025.11342868

Gomel, J., Torre Tresols, J., Cimarost, P., Cabrera Castillo, K., & Dehais, F. (2025b). Star-burst paradigm: implementation of an "invisible" dry-EEG reactive BCI. In *11th international brain-computer interface meeting 2025.* Retrieved from https://hal.science/hal-05300721/

Grigoryan, R., Filatov, D., & Kaplan, A. (2019). High-speed brain-computer communication interface based on code-modulated visual evoked potentials. *Bulletin of Russian State Medical University*(2). Retrieved from https://doi.org/10.24075/brsmu.2019.019 doi: 10.24075/brsmu.2019.019

Guyonnet-Hencke, T., Portoles, O., de Vries, M., Koderman, E., Winkler, A., Goodall, J., … van Kesteren, M. (2025). Rapid cortical auditory evoked potentials audiometry. *International Journal of Audiology*, 1–11. Retrieved from https://doi.org/10.1080/14992027.2025.2478523 doi: 10.1080/14992027.2025.2478523

Hanagata, J., & Momose, K. (2002). A method for detecting gazed target using visual evoked potentials elicited by pseudorandom stimuli. In *Proc. 5th asia pacific conf. medical and biological engineering and 11th int. conf. biomedical engineering (icbme).*

Henke, L., Rulffs, P., Adepoju, F., Stawicki, P., Cantürk, A., & Volosyak, I. (2023). Investigating the influence of background music on the performance of a cVEP-based BCI. In *2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC)* (pp. 1104–1109). Retrieved from https://doi.org/10.3390/healthcare11071014 doi: 10.3390/healthcare11071014

Huang, C., Shi, N., Miao, Y., Chen, X., Wang, Y., & Gao, X. (2024). Visual tracking brain-computer interface. *iScience*, *27*(4). Retrieved from https://doi.org/10.1016/j.isci.2024.109376 doi: 10.1016/j.isci.2024.109376

Huang, Z., Liao, Z., Ou, G., Chen, L., & Zhang, Y. (2023). Authentication using c-vep evoked in a mild-burdened cognitive task. *Frontiers in Human Neuroscience*, *17*, 1240451. Retrieved from https://doi.org/10.3389/fnhum.2023.1240451 doi: 10.3389/fnhum.2023.1240451

Huang, Z., Zheng, W., Wu, Y., & Wang, Y. (2020). Ensemble or pool: A comprehensive study on transfer learning for c-VEP BCI during interpersonal interaction. *Journal of Neuroscience Methods*, *343*, 108855. Retrieved from https://doi.org/10.1016/j.jneumeth.2020.108855 doi: 10.1016/j.jneumeth.2020.108855

Isaksen, J., Mohebbi, A., & Puthusserypady, S. (2016). A comparative study of pseudorandom sequences used in a c-VEP based BCI for online wheelchair control. In *2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 1512–1515). Retrieved from https://doi.org/10.1109/EMBC.2016.7590997 doi: 10.1109/EMBC.2016.7590997

Isaksen, J., Mohebbi, A., & Puthusserypady, S. (2017). Optimal pseudorandom sequence selection for online c-VEP based BCI control applications. *PLOS One*, *12*(9), e0184785. Retrieved from https://doi.org/10.1371/journal.pone.0184785 doi: 10.1371/journal.pone.0184785

Kadıoğlu, B., Yıldız, İ., Closas, P., Fried-Oken, M. B., & Erdoğmuş, D. (2019). Robust fusion of c-VEP and gaze. *IEEE Sensors Letters*, *3*(1), 1–4. Retrieved from https://doi.org/10.1109/LSENS.2018.2878705 doi: 10.1109/LSENS.2018.2878705

Kapeller, C., Hintermüller, C., Abu-Alqumsan, M., Prückl, R., Peer, A., & Guger, C. (2013). A BCI using VEP for continuous control of a mobile robot. In *2013 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 5254–5257). Retrieved from https://doi.org/10.1109/EMBC.2013.6610734 doi: 10.1109/EMBC.2013.6610734

Kapeller, C., Kamada, K., Ogawa, H., Prueckl, R., Scharinger, J., & Guger, C. (2014). An electrocorticographic BCI using code-based VEP for control in video applications: a single-subject study. *Frontiers in Systems Neuroscience*, *8*, 139. Retrieved from https://doi.org/10.3389/fnsys.2014.00139 doi: 10.3389/fnsys.2014.00139

Kaya, I. (2019). *High rate quasi-steady-state pattern visual evoked potentials for brain-computer interface* (Unpublished doctoral dissertation). University of Miami.

Kaya, I., Bohórquez, J., & Özdamar, Ö. (2019). A BCI gaze sensing method using low jitter code modulated VEP. *Sensors*, *19*(17), 3797. Retrieved from https://doi.org/10.3390/s19173797 doi: 10.3390/s19173797

Kaya, I., Bohorquez, J., & Özdamar, Ö. (2021). BCI performance improvement by special low jitter quasi-steady-state VEP paradigm. *Modern Approaches to Augmentation of Brain Function*, 121–139. Retrieved from https://doi.org/10.1007/978-3-030-54564-2_7 doi: 10.1007/978-3-030-54564-2_7

Kaya, I., Bohorquez, J. E., & Ozdamar, O. (2019). Brain computer interface switch based on quasi-steady-state visual evoked potentials. In *2019 9th international ieee/embs conference on neural engineering (ner)* (pp. 1175–1178).

Kiser, A., Cantürk, A., & Volosyak, I. (2025). Towards secure transaction authentication using a cVEP-based BCI. In *International work-conference on artificial neural networks* (pp. 533–547). Retrieved from https://doi.org/10.1007/978-3-032-02728-3_43 doi: 10.1007/978-3-032-02728-3_43

Lai, E., Mai, X., Ji, M., Li, S., & Meng, J. (2024). High-frequency discrete-interval binary sequence in asynchronous c-VEP-based BCI for visual fatigue reduction. *IEEE Journal of Biomedical and Health Informatics*, *28*(5), 2769–2780. Retrieved from https://doi.org/10.1109/BIBM58861.2023.10385977 doi: 10.1109/BIBM58861.2023.10385977

Lai, E., Mai, X., & Meng, J. (2023). High-performance deep neural network pretrained with contrastive learning for asynchronous high-frequency c-VEP detection. In *2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)* (pp. 2515–2521). Retrieved from https://doi.org/10.1109/BIBM58861.2023.10385977 doi: 10.1109/BIBM58861.2023.10385977

Lai, S. M., Zhang, Z., Hung, Y. S., Niu, Z., & Chang, C. (2011). A chromatic transient visual evoked potential based encoding/decoding approach for brain–computer interface. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, *1*(4), 578–589. Retrieved from https://doi.org/10.1109/JETCAS.2011.2178734 doi: 10.1109/JETCAS.2011.2178734

Le, T. P. N., Fodor, M. A., Cantürk, A., & Volosyak, I. (2025). Feasibility of secure transaction authentication using a cVEP-based BCI. In *2025 13th international conference on brain-computer interface (bci)* (pp. 1–6). Retrieved from https://doi.org/10.1109/BCI65088.2025.10931547 doi: 10.1109/BCI65088.2025.10931547

Liu, Y., Wei, Q., & Lu, Z. (2018). A multi-target brain-computer interface based on code modulated visual evoked potentials. *PLOS One*, *13*(8), e0202478. Retrieved from https://doi.org/10.1371/journal.pone.0202478 doi: 10.1371/journal.pone.0202478

Luo, D., & Huang, Z. (2019). A subject-transfer study on detecting c-VEP. In *2019 Chinese Automation Congress (CAC)* (pp. 2956–2959). Retrieved from https://doi.org/10.1109/CAC48633.2019.8996478 doi: 10.1109/CAC48633.2019.8996478

Martínez-Cagigal, V., Martín-Fernández, A., Santamaría-Vázquez, E., Pascual-Roa, B., Ruiz-Gálvez, R., & Hornero, R. (2025). Advancing asynchronous c-VEP-based BCIs: A pilot study. In J. L. Pons, J. Tornero, & M. Akay (Eds.), *Converging clinical and engineering research on neurorehabilitation v* (pp. 690–693). Cham: Springer Nature Switzerland. Retrieved from https://doi.org/10.1007/978-3-031-77588-8_135 doi: 10.1007/978-3-031-77588-8_135

Martínez-Cagigal, V., Santamaría-Vázquez, E., & Hornero, R. (2023). Toward early stopping detection for non-binary c-vep-based bcis: A pilot study. In I. Rojas, G. Joya, & A. Catala (Eds.), *Advances in Computational Intelligence* (pp. 580–590). Cham: Springer Nature Switzerland. Retrieved from https://doi.org/10.1007/978-3-031-43078-7_47 doi: 10.1007/978-3-031-43078-7_47

Martínez-Cagigal, V., Santamaría-Vázquez, E., Pérez-Velasco, S., Marcos-Martínez, D., Moreno-Calderón, S., & Hornero, R. (2023). Non-binary m-sequences for more comfortable brain–computer interfaces based on c-VEPs. *Expert Systems with Applications*, *232*, 120815. Retrieved from https://doi.org/10.1016/j.eswa.2023.120815 doi: 10.1016/j.eswa.2023.120815

Martínez-Cagigal, V., Santamaría-Vázquez, E., Pérez-Velasco, S., Martín-Fernández, A., & Hornero, R. (2025). Reevaluating performance in c-VEP BCIs: The impact of calibration time. *Biocybernetics and Biomedical Engineering*, *45*(4), 685–696. Retrieved from https://doi.org/10.1016/j.bbe.2025.10.006 doi: 10.1016/j.bbe.2025.10.006

Martínez-Cagigal, V., Thielen, J., Hornero, R., & Desain, P. (2025). The role of code-modulated evoked potentials in next-generation brain-computer interfacing. *Frontiers in Human Neuroscience*, *19*, 1548183. Retrieved from https://doi.org/10.3389/fnhum.2025.1548183 doi: 10.3389/fnhum.2025.1548183

Martínez-Cagigal, V., Thielen, J., Santamaría-Vázquez, E., Pérez-Velasco, S., Desain, P., & Hornero, R. (2021). Brain–computer interfaces based on code-modulated visual evoked potentials (c-VEP): a literature review. *Journal of Neural Engineering*, *18*, 061002. Retrieved from https://doi.org/10.1088/1741-2552/ac38cf doi: 10.1088/1741-2552/ac38cf

Martín-Fernández, A., Martínez-Cagigal, V., Moreno-Calderón, S., Santamaría-Vázquez, E., & Hornero, R. (2025). Enhancing user experience in c-VEP-based BCI: Effects of visual stimulus opacity on performance and visual fatigue. *Biomedical Signal Processing and Control*, *108*, 107894. Retrieved from https://doi.org/10.1016/j.bspc.2025.107894 doi: 10.1016/j.bspc.2025.107894

Martín-Fernández, A., Martínez-Cagigal, V., Moreno-Calderón, S., Santamaría-Vázquez, E., Pascual-Roa, B., & Hornero, R. (2025). Exploring code-modulated visual evoked potentials spellers in realistic scenarios. In *International work-conference on artificial neural networks* (pp. 521–532). Retrieved from https://doi.org/10.1007/978-3-032-02728-3_42 doi: 10.1007/978-3-032-02728-3_42

Martínez-Cagigal, V., Álvaro Fernández-Rodríguez, Santamaría-Vázquez, E., Martín-Fernández, A., & Hornero, R. (2024). Assessing calibration durations for c-VEP-based BCIs: Insights from non-binary patterns and spatial frequency variations. In *9th Graz Brain-Computer Interface Conference 2024* (pp. 230–235). Retrieved from https://doi.org/10.3217/978-3-99161-014-4-041 doi: 10.3217/978-3-99161-014-4-041

Matsuno, S., Itakura, N., Mizuno, T., & Mito, K. (2019). Examination of multi-optioning for cVEP-based BCI by fluctuation of indicator lighting intervals and luminance. In *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)* (pp. 2743–2747). Retrieved from https://doi.org/10.1109/SMC.2019.8914445 doi: 10.1109/SMC.2019.8914445

Miao, Y., Shi, N., Huang, C., Song, Y., Chen, X., Wang, Y., & Gao, X. (2024). High-performance c-VEP-BCI under minimal calibration. *Expert Systems with Applications*, *249*, 123679. Retrieved from https://doi.org/10.1016/j.eswa.2024.123679 doi: 10.1016/j.eswa.2024.123679

Miao, Z., Meunier, A., Žák, M. R., & Grosse-Wentrup, M. (2024). Exploring artificial neural network models for c-VEP decoding in a brain-artificial intelligence interface. In *2024 ieee international conference on bioinformatics and biomedicine (bibm)* (pp. 4178–4183). Retrieved from https://eprints.cs.univie.ac.at/8197/

Mohebbi, A., Engelsholm, S. K., Puthusserypady, S., Kjaer, T. W., Thomsen, C. E., & Sorensen, H. B. (2015). A brain computer interface for robust wheelchair control application based on pseudorandom code modulated visual evoked potential. In *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 602–605). Retrieved from https://doi.org/10.1109/EMBC.2015.7318434 doi: 10.1109/EMBC.2015.7318434

Momose, K. (2007). Evaluation of an eye gaze point detection method using VEP elicited by multi-pseudorandom stimulation for brain computer interface. In *2007 29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (pp. 5063–5066). Retrieved from https://doi.org/10.1109/IEMBS.2007.4353478 doi: 10.1109/IEMBS.2007.4353478

Momose, K. (2008). Simultaneous detection method of P300 event-related potentials and eye gaze point using multi-pseudorandom and flash stimulation for brain computer interface. In *2008 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (pp. 666–669). Retrieved from https://doi.org/10.1109/IEMBS.2008.4649240 doi: 10.1109/IEMBS.2008.4649240

Moreno-Calderón, S., Martínez-Cagigal, V., Santamaría-Vázquez, E., Pérez-Velasco, S., Marcos-Martínez, D., & Hornero, R. (2023). Combining brain-computer interfaces and multiplayer video games: an application based on c-VEPs. *Frontiers in Human Neuroscience*, *17*. Retrieved from https://doi.org/10.3389/fnhum.2023.1227727 doi: 10.3389/fnhum.2023.1227727

Moreno-Calderón, S., Martínez-Cagigal, V., Martín-Fernández, A., Santamaría-Vázquez, E., & Hornero, R. (2025). Toward the integration of mixed reality and brain-computer interfaces based on code-modulated visual evoked potentials. *Biocybernetics and Biomedical Engineering*, *45*(3), 528-538. Retrieved from https://doi.org/10.1016/j.bbe.2025.06.003 doi: 10.1016/j.bbe.2025.06.003

Moreno-Calderón, S., Martínez-Cagigal, V., Martín-Fernández, A., Santamaría-Vázquez, E., Pascual-Roa, B., & Hornero, R. (2025). Exploring the integration of c-VEP-based BCI spellers in mixed reality: A pilot study. In *Advances in Computational Intelligence* (pp. 584–594). Retrieved from https://doi.org/10.1007/978-3-032-02728-3_47 doi: 10.1007/978-3-032-02728-3_47

Nagel, S. (2019). *Towards a home-use BCI: fast asynchronous control and robust non-control state detection* (Unpublished doctoral dissertation). Universität Tübingen.

Nagel, S., Dreher, W., Rosenstiel, W., & Spüler, M. (2018). The effect of monitor raster latency on VEPs, ERPs and brain–computer interface performance. *Journal of Neuroscience Methods*, *295*, 45–50. Retrieved from https://doi.org.10.1016/j.jneumeth.2017.11.018 doi: 10.1016/j.jneumeth.2017.11.018

Nagel, S., Rosenstiel, W., & Spüler, M. (2017). Random visual evoked potentials (rVEP) for brain-computer interface (BCI) control. In *7th Graz Brain-Computer Interface Conference 2017* (pp. 349–354). Retrieved from https://doi.org/10.3217/978-3-85125-533-1-64 doi: 10.3217/978-3-85125-533-1-64

Nagel, S., Rosenstiel, W., & Spüler, M. (2018). Finding optimal stimulation patterns for BCIs based on visual evoked potentials. In *Proceedings of the 7th International Brain-Computer Interface Meeting. BCI Society* (pp. 164–165). Retrieved from https://bcisociety.org/wp-content/uploads/2019/03/2018AbstractBook.pdf

Nagel, S., & Spüler, M. (2018). Modelling the brain response to arbitrary visual stimulation patterns for a flexible high-speed brain-computer interface. *PLOS One*, *13*(10), e0206107. Retrieved from https://doi.org/10.1371/journal.pone.0206107 doi: 10.1371/journal.pone.0206107

Nagel, S., & Spüler, M. (2019a). Asynchronous non-invasive high-speed BCI speller with robust non-control state detection. *Scientific Reports*, *9*(1), 1–9. Retrieved from https://doi.org/10.1038/s41598-019-44645-x doi: 10.1038/s41598-019-44645-x

Nagel, S., & Spüler, M. (2019b). World's fastest brain-computer interface: combining EEG2Code with deep learning. *PLOS One*, *14*(9), e0221909. Retrieved from https://doi.org/10.1371/journal.pone.0221909 doi: 10.1371/journal.pone.0221909

Nair, K., & Cecotti, H. (2025). Deep learning architectures for code-modulated visual evoked potentials detection. *arXiv preprint arXiv:2511.21940*. Retrieved from https://doi.org/10.48550/arXiv.2511.21940 doi: 10.48550/arXiv.2511.21940

Nakanishi, M., & Mitsukura, Y. (2012). Periodicity detection for BCI based on periodic code modulation visual evoked potentials. In *2012 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 665–668). Retrieved from https://doi.org/10.1109/ICASSP.2012.6287971 doi: 10.1109/ICASSP.2012.6287971

Narayanan, S., Ahmadi, S., Desain, P., & Thielen, J. (2024). Towards gaze-independent c-VEP BCI: A pilot study. In *9th Graz Brain-Computer Interface Conference 2024* (pp. 343–348). Retrieved from https://doi.org/10.3217/978-3-99161-014-4-060 doi: 10.3217/978-3-99161-014-4-060

Nezamfar, H., Mohseni Salehi, S., Higger, M., & Erdogmus, D. (2018). Code-VEP vs. eye tracking: A comparison study. *Brain Sciences*, *8*(7), 130. Retrieved from https:/doi.org/10.3390/brainsci8070130 doi: 10.3390/brainsci8070130

Nezamfar, H., Orhan, U., Erdogmus, D., Hild, K., Purwar, S., Oken, B., & Fried-Oken, M. (2011). On visually evoked potentials in eeg induced by multiple pseudorandom binary sequences for brain computer interface design. In *2011 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 2044–2047). Retrieved from https://doi.org/10.1109/ICASSP.2011.5946914 doi: 10.1109/ICASSP.2011.5946914

Nezamfar, H., Orhan, U., Purwar, S., Hild, K., Oken, B., & Erdogmus, D. (2011). Decoding of multichannel EEG activity from the visual cortex in response to pseudorandom binary sequences of visual stimuli. *International Journal of Imaging Systems and Technology*, *21*(2), 139–147. Retrieved from https://doi.org/10.1002/ima.20288 doi: 10.1002/ima.20288

Nezamfar, H., Salehi, S. S. M., & Erdogmus, D. (2015). Stimuli with opponent colors and higher bit rate enable higher accuracy for c-VEP BCI. In *2015 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)* (pp. 1–6). Retrieved from https://doi.org/10.1109/SPMB.2015.7405476 doi: 10.1109/SPMB.2015.7405476

Nezamfar, H., Salehi, S. S. M., Moghadamfalahi, M., & Erdogmus, D. (2016). Flashtype^{TM}: A context-aware c-VEP-based BCI typing interface using EEG signals. *IEEE Journal of Selected Topics in Signal Processing*, *10*(5), 932–941. Retrieved from https://doi.org/10.1109/JSTSP.2016.2552140 doi: 10.1109/JSTSP.2016.2552140

Peng, F., & Huang, Z. (2019). A c-VEP BCI system for psychological experiments. In *2019 12th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI)* (pp. 1–5). Retrieved from https://doi.org/10.1109/CISP-BMEI48845.2019.8966018 doi: 10.1109/CISP-BMEI48845.2019.8966018

Qu, H., Zhao, H., Wei, Q., Pei, W., Gao, X., & Wang, Y. (2024). Combing multiple visual stimuli to enhance the performance of VEP-based biometrics. *IEEE Transactions on Information Forensics and Security*, *19*, 7982–7993. Retrieved from https://doi.org/10.1109/TIFS.2024.3452628 doi: 10.1109/TIFS.2024.3452628

Riechmann, H., Finke, A., & Ritter, H. (2013). Hierarchical codebook visually evoked potentials for fast and flexible BCIs. In *2013 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 2776–2779). Retrieved from https://doi.org/10.1109/EMBC.2013.6610116 doi: 10.1109/EMBC.2013.6610116

Riechmann, H., Finke, A., & Ritter, H. (2016). Using a cVEP-based brain-computer interface to control a virtual agent. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, *24*(6), 692–699. Retrieved from https://doi.org/10.1109/TNSRE.2015.2490621 doi: 10.1109/TNSRE.2015.2490621

Santamaría-Vázquez, E., Martínez-Cagigal, V., & Hornero, R. (2023). Bit-wise reconstruction of non-binary visual stimulation patterns from EEG using deep learning: A promising alternative for user-friendly high-speed c-VEP-based BCIs. In I. Rojas, G. Joya, & A. Catala (Eds.), *Advances in Computational Intelligence* (pp. 603–614). Cham: Springer Nature Switzerland. Retrieved from https://doi.org/10.1007/978-3-031-43078-7_49 doi: 10.1007/978-3-031-43078-7_49

Santamaría-Vázquez, E., Martínez-Cagigal, V., Ruiz-Gálvez, R., Martín-Fernández, A., Pascual-Roa, B., & Hornero, R. (2025). Towards calibration-free user-friendly c-VEP-based BCIs: An exploratory study using deep-learning. In J. L. Pons, J. Tornero, & M. Akay (Eds.), *Converging clinical and engineering research on neurorehabilitation v* (pp. 685–689). Cham: Springer Nature Switzerland. Retrieved from https://doi.org/10.1007/978-3-031-77588-8_134 doi: 10.1007/978-3-031-77588-8_134

Sato, J.-i., & Washizawa, Y. (2015). Reliability-based automatic repeat request for short code modulation visual evoked potentials in brain computer interfaces. In *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 562–565). Retrieved from https://doi.org/10.1109/EMBC.2015.7318424 doi: 10.1109/EMBC.2015.7318424

Sato, J.-i., & Washizawa, Y. (2016). Neural decoding of code modulated visual evoked potentials by spatio-temporal inverse filtering for brain computer interfaces. In *2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 1484–1487). Retrieved from https://doi.org/10.1109/EMBC.2016.7590990 doi: 10.1109/EMBC.2016.7590990

Scheppink, H. A., Ahmadi, S., Desain, P., Tangermann, M., & Thielen, J. (2024). Towards auditory attention decoding with noise-tagging: A pilot study. In *9th Graz Brain-Computer Interface Conference 2024* (pp. 337–342). Retrieved from https://doi.org/10.3217/978-3-99161-014-4-059 doi: 10.3217/978-3-99161-014-4-059

Scheppink, H. A., Cantürk, A., & Volosyak, I. (2025). BCI with intuitive object control based on code-modulated visual evoked potentials. In *International work-conference on artificial neural networks* (pp. 572–583). Retrieved from https://doi.org/10.1007/978-3-032-02728-3_46 doi: 10.1007/978-3-032-02728-3_46

Shi, N., Miao, Y., Huang, C., Li, X., Song, Y., Chen, X., … Gao, X. (2024). Estimating and approaching the maximum information rate of noninvasive visual brain-computer interface. *NeuroImage*, *289*, 120548. Retrieved from https://doi.org/10.1016/j.neuroimage.2024.120548 doi: 10.1016/j.neuroimage.2024.120548

Shirzhiyan, Z., Keihani, A., Farahi, M., Shamsi, E., GolMohammadi, M., Mahnam, A., … Jafari, A. H. (2019). Introducing chaotic codes for the modulation of code modulated visual evoked potentials (c-VEP) in normal adults for visual fatigue reduction. *PLOS One*, *14*(3), e0213197. Retrieved from https://doi.org/10.1371/journal.pone.0213197 doi: 10.1371/journal.pone.0213197

Shirzhiyan, Z., Keihani, A., Farahi, M., Shamsi, E., GolMohammadi, M., Mahnam, A., … Jafari, A. H. (2020). Toward new modalities in VEP-based BCI applications using dynamical stimuli: Introducing quasi-periodic and chaotic VEP-based BCI. *Frontiers in Neuroscience*, *14*. Retrieved from https://doi.org/10.3389/fnins.2020.534619 doi: 10.3389/fnins.2020.534619

Spüler, M. (2015). A brain-computer interface (BCI) system to use arbitrary Windows applications by directly controlling mouse and keyboard. In *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 1087–1090). Retrieved from https://doi.org/10.1109/EMBC.2015.7318554 doi: 10.1109/EMBC.2015.7318554

Spüler, M. (2017). A high-speed brain-computer interface (BCI) using dry EEG electrodes. *PLOS One*, *12*(2), e0172400. Retrieved from https://doi.org/10.1371/journal.pone.0172400 doi: 10.1371/journal.pone.0172400

Spüler, M., & Kurek, S. (2018). Alpha-band lateralization during auditory selective attention for brain–computer interface control. *Brain-Computer Interfaces*, *5*(1), 23–29. Retrieved from https://doi.org/10.1080/2326263X.2017.1415496 doi: 10.1080/2326263X.2017.1415496

Spüler, M., Rosenstiel, W., & Bogdan, M. (2012a). One class SVM and canonical correlation analysis increase performance in a c-VEP based brain-computer interface (BCI). In *ESANN*. Retrieved from https://www.esann.org/sites/default/files/proceedings/legacy/es2012-18.pdf

Spüler, M., Rosenstiel, W., & Bogdan, M. (2012b). Online adaptation of a c-VEP brain-computer interface (BCI) based on error-related potentials and unsupervised learning. *PLOS One*, *7*(12), e51077. Retrieved from https://doi.org/10.1371/journal.pone.0051077 doi: 10.1371/journal.pone.0051077

Spüler, M., Rosenstiel, W., & Bogdan, M. (2013a). Unsupervised BCI calibration as possibility for communication in CLIS patients. In *Proceedings of the Fifth International Brain-Computer Interface Meeting* (Vol. 2013). Retrieved from https://doi.org/10.3217/978-3-85125-260-6-122 doi: 10.3217/978-3-85125-260-6-122

Spüler, M., Rosenstiel, W., & Bogdan, M. (2013b). Unsupervised online calibration of a c-VEP brain-computer interface (BCI). In *International Conference on Artificial Neural Networks* (pp. 224–231). Retrieved from https://doi.org/10.1007/978-3-642-40728-4_28 doi: 10.1007/978-3-642-40728-4_28

Spüler, M., Walter, A., Rosenstiel, W., & Bogdan, M. (2013). Spatial filtering based on canonical correlation analysis for classification of evoked or event-related potentials in EEG data. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, *22*(6), 1097–1103. Retrieved from https://doi.org/10.1109/TNSRE.2013.2290870 doi: 10.1109/TNSRE.2013.2290870

Stawicki, P., & Volosyak, I. (2022). cVEP training data validation – towards optimal training set composition from multi-day data. *Brain Sciences*, *12*(2). Retrieved from https://doi.org.10.3390/brainsci12020234 doi: 10.3390/brainsci12020234

Sun, Q., Zhang, S., Dong, G., Pei, W., Gao, X., & Wang, Y. (2024). High-density electroencephalogram facilitates the detection of small stimuli in code-modulated visual evoked potential brain–computer interfaces. *Sensors*, *24*(11), 3521. Retrieved from https://doi.org/10.3390/s24113521 doi: 10.3390/s24113521

Sun, Q., Zheng, L., Pei, W., Gao, X., & Wang, Y. (2022). A 120-target brain-computer interface based on code-modulated visual evoked potentials. *Journal of Neuroscience Methods*, *375*, 109597. Retrieved from https://doi.org/10.1016/j.jneumeth.2022.109597 doi: 10.1016/j.jneumeth.2022.109597

Sutter, E. E. (1984). The visual evoked response as a communication channel. In *Proceedings of the IEEE Symposium on Biosensors* (pp. 95–100).

Sutter, E. E. (1992). The brain response interface: communication through visually-induced electrical brain responses. *Journal of Microcomputer Applications*, *15*(1), 31–45. Retrieved from https://doi.org/10.1016/0745-7138(92)90045-7 doi: 10.1016/0745-7138(92)90045-7

Tangermann, M., Chevallier, S., Dold, M., Guetschel, P., Kobler, R., Papadopoulo, T., & Thielen, J. (2025). Learning from small datasets–review of workshop 6 of the 10th international BCI meeting 2023. *Journal of Neural Engineering*.

Thielen, J. (2023). Effects of stimulus sequences on brain-computer interfaces using code-modulated visual evoked potentials: An offline simulation. In I. Rojas, G. Joya, & A. Catala (Eds.), *Advances in Computational Intelligence* (pp. 555–568). Cham: Springer Nature Switzerland. Retrieved from https://doi.org/10.1007/978-3-031-43078-7_45 doi: 10.1007/978-3-031-43078-7_45

Thielen, J. (2025a). Addressing BCI inefficiency in c-VEP-based BCIs: A comprehensive study of neurophysiological predictors, binary stimulus sequences, and user comfort. *Biomedical Physics & Engineering Express*. Retrieved from https://doi.org/10.1088/2057-1976/ade316 doi: 10.1088/2057-1976/ade316

Thielen, J. (2025b). *Binary stimulus sequences for brain-computer interfaces (BCI) using the code-modulated-visual evoked potential (c-VEP).* Radboud University. Retrieved from https://doi.org/10.34973/6dw9-0924 doi: 10.34973/6dw9-0924

Thielen, J., Cornielje, G., van der Werff, F., & Desain, P. (2023). A comparison of stimulus sequences for code-modulated visual evoked potential (c-VEP) based BCI. In N. Mrachacz-Kersting, J. Collinger, D. Mattia, D. Valeriani, M. Vansteensel, & G. Müller-Putz (Eds.), *Proceedings of the 10th International Brain-Computer Interface Meeting 2023: Balancing Innovation and Translation.* Retrieved from https://doi.org/10.3217/978-3-85125-962-9-139 doi: 10.3217/978-3-85125-962-9-139

Thielen, J., Farquhar, J., & Desain, P. (2016). Re(con)volution: accurate response prediction for BBVEP-based BCI. In G. R. Müller-Putz, J. E. Huggins, & D. Steyrl (Eds.), *Proceedings of the Sixth International Brain-Computer Interface Meeting: BCI Past, Present, and Future.* Retrieved from https://doi.org/10.3217/978-3-85125-467-9-34 doi: 10.3217/978-3-85125-467-9-34

Thielen, J., Farquhar, J., & Desain, P. (2024). *Broad-Band Visually Evoked Potentials: Re(con)volution in Brain-Computer Interfacing.* Radboud University. Retrieved from https://doi.org/10.34973/1ecz-1232 doi: 10.34973/1ecz-1232

Thielen, J., Marsman, P., Farquhar, J., & Desain, P. (2017). Re(con)volution: Accurate response prediction for broad-band evoked potentials-based brain computer interfaces. In *Brain-Computer Interface Research* (pp. 35–42). Springer. Retrieved from https://doi.org/10.1007/978-3-319-64373-1_4 doi: 10.1007/978-3-319-64373-1_4

Thielen, J., Marsman, P., Farquhar, J., & Desain, P. (2021). From full calibration to zero training for a code-modulated visual evoked potentials for brain–computer interface. *Journal of Neural Engineering*, *18*(5), 056007. Retrieved from https://doi.org/10.1088/1741-2552/abecef doi: 10.1088/1741-2552/abecef

Thielen, J., Marsman, P., Farquhar, J., & Desain, P. (2023). *From full calibration to zero training for a code-modulated visual evoked potentials brain computer interface.* Radboud University. Retrieved from https://doi.org/10.34973/9txv-z787 doi: 10.34973/9txv-z787

Thielen, J., Sosulski, J., & Tangermann, M. (2024). Exploring new territory: Calibration-free decoding for c-VEP BCI. In *9th Graz Brain-Computer Interface Conference 2024* (pp. 325–330). Retrieved from https://doi.org/10.3217/978-3-99161-014-4-057 doi: 10.3217/978-3-99161-014-4-057

Thielen, J., Tangermann, M., Aarnoutse, E. J., Ramsey, N. F., & Vansteensel, M. J. (2025). Towards an sEEG-based BCI using code-modulated VEP: A case study showing the influence of electrode location on decoding efficiency. *Clinical neurophysiology: official journal of the International Federation of Clinical Neurophysiology*, *173*, 213–215. Retrieved from https://doi.org/10.1016/j.clinph.2025.03.034 doi: 10.1016/j.clinph.2025.03.034

Thielen, J., van den Broek, P., Farquhar, J., & Desain, P. (2015). Broad-band visually evoked potentials: re(con)volution in brain-computer interfacing. *PLOS One*, *10*(7), e0133797. Retrieved from https://doi.org/10.1371/journal.pone.0133797 doi: 10.1371/journal.pone.0133797

Torres, J. A. R., & Daly, I. (2021). How to build a fast and accurate code-modulated brain-computer interface. *Journal of Neural Engineering*, *18*, 046052. Retrieved from https://doi.org/10.1088/1741-2552/abfaac doi: 10.1088/1741-2552/abfaac

Tu, Y., Hung, Y. S., Hu, L., Huang, G., Hu, Y., & Zhang, Z. (2014). An automated and fast approach to detect single-trial visual evoked potentials with application to brain–computer interface. *Clinical Neurophysiology*, *125*(12), 2372–2383. Retrieved from https://doi.org/10.1016/j.clinph.2014.03.028 doi: 10.1016/j.clinph.2014.03.028

Turi, F., & Clerc, M. (2019). Adaptive parameter setting in a code modulated visual evoked potentials BCI. *HAL Open Science*. Retrieved from https://inria.hal.science/hal-02303562/document

Turi, F., Gayraud, N., & Clerc, M. (2018). Zero-calibration cVEP BCI using word prediction: a proof of concept. *arXiv preprint arXiv:1810.03428*. Retrieved from https://doi.org/10.48550/arXiv.1810.03428 doi: 10.48550/arXiv.1810.03428

Turi, F., Gayraud, T., & Clerc, M. (2020). Auto-calibration of c-VEP BCI by word prediction. *HAL Open Science*. Retrieved from https://hal.science/hal-02844024/document

Velut, S., Chevallier, S., Corsi, M.-C., & Dehais, F. (2024). Deep Riemannian neural architectures for domain adaptation in burst cVEP-based brain computer interface. In *Esann 2024* (pp. 571–576). Retrieved from https://hal.science/hal-04720928/

Verbaarschot, C., Tump, D., Lutu, A., Borhanazad, M., Thielen, J., van den Broek, P., ... Desain, P. (2021). A visual brain-computer interface as communication aid for patients with amyotrophic lateral sclerosis. *Clinical Neurophysiology*, *132*(10), 2404–2415. Retrieved from https://doi.org/10.1016/j.clinph.2021.07.012 doi: 10.1016/j.clinph.2021.07.012

Vodila, R., van Lohuizen, J., & Thielen, J. (2025). Toward a gaze-independent brain-computer interface using the code-modulated visual evoked potentials. In *2025 ieee 35th international workshop on machine learning for signal processing (mlsp)* (pp. 1–6). Retrieved from https://doi.org/10.1109/MLSP62443.2025.11204258 doi: 10.1109/MLSP62443.2025.11204258

Volosyak, I., Adepoju, F., Stawicki, P., Rulffs, P., Cantürk, A., & Henke, L. (2023). Gender influence on cvep-based bci performance. In I. Rojas, G. Joya, & A. Catala (Eds.), *Advances in Computational Intelligence* (pp. 591–602). Cham: Springer Nature Switzerland. Retrieved from https://doi.org/10.1007/978-3-031-43078-7_48 doi: 10.1007/978-3-031-43078-7_48

Volosyak, I., Rezeika, A., Benda, M., Gembler, F., & Stawicki, P. (2020). Towards solving of the illiteracy phenomenon for VEP-based brain-computer interfaces. *Biomedical Physics & Engineering Express*, *6*(3), 035034. Retrieved from https://doi.org/10.1088/2057-1976/ab87e6 doi: 10.1088/2057-1976/ab87e6

Waytowich, N. R., & Krusienski, D. J. (2015). Spatial decoupling of targets and flashing stimuli for visual brain–computer interfaces. *Journal of Neural Engineering*, *12*(3), 036006. Retrieved from https://doi.org/10.1088/1741-2560/12/3/036006 doi: 10.1088/1741-2560/12/3/036006

Wei, Q., Feng, S., & Lu, Z. (2016). Stimulus specificity of brain-computer interfaces based on code modulation visual evoked potentials. *PLOS One*, *11*(5), e0156416. Retrieved from https://doi.org/10.1371/journal.pone.0156416 doi: 10.1371/journal.pone.0156416

Wei, Q., Gong, H., & Lu, Z. (2017). Grouping modulation with different codes for improving performance in cVEP-based brain–computer interfaces. *Electronics Letters*, *53*(4), 214–216. Retrieved from https://doi.org/10.1049/el.2016.4006 doi: 10.1049/el.2016.4006

Wei, Q., Huang, Y., Li, M., & Lu, Z. (2016). VEP-based brain-computer interfaces modulated by Golay complementary series for improving performance. *Technology and Health Care*, *24*(s2), S541–S549. Retrieved from https://doi.org/10.3233/THC-161180 doi: 10.3233/THC-161180

Wei, Q., Liu, Y., Gao, X., Wang, Y., Yang, C., Lu, Z., & Gong, H. (2018). A novel c-VEP BCI paradigm for increasing the number of stimulus targets based on grouping modulation with different codes. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, *26*(6), 1178–1187. Retrieved from https://doi.org/10.1109/TNSRE.2018.2837501 doi: 10.1109/TNSRE.2018.2837501

Wittevrongel, B., Van Wolputte, E., & Van Hulle, M. M. (2017). Code-modulated visual evoked potentials using fast stimulus presentation and spatiotemporal beamformer decoding. *Scientific Reports*, *7*(1), 15037. Retrieved from https://doi.org/10.1038/s41598-017-15373-x doi: 10.1038/s41598-017-15373-x

Wolf, P., & Götzelmann, T. (2023). VEPdgets: Towards richer interaction elements based on visually evoked potentials. *Sensors*, *23*(22), 9127. Retrieved from https://doi.org/10.3390/s23229127 doi: 10.3390/s23229127

Xu, H., Hsu, S.-H., Nakanishi, M., Lin, Y., Jung, T.-P., & Cauwenberghs, G. (2023). Stimulus design for visual evoked potential based brain-computer interfaces. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. Retrieved from https://doi.org/10.1109/TNSRE.2023.3280081 doi: 10.1109/TNSRE.2023.3280081

Yasinzai, M. N., & Ider, Y. Z. (2020). New approach for designing cVEP BCI stimuli based on superposition of edge responses. *Biomedical Physics & Engineering Express*, *6*(4), 045018. Retrieved from https://doi.org/10.1088/2057-1976/ab98e7 doi: 10.1088/2057-1976/ab98e7

Ying, J., Wei, Q., & Zhou, X. (2022). Riemannian geometry-based transfer learning for reducing training time in c-VEP BCIs. *Scientific Reports*, *12*(1), 1–15. Retrieved from https://doi.org/10.1038/s41598-022-14026-y doi: 10.1038/s41598-022-14026-y

Yu, F., Rao, Z., Chen, N., Liu, L., & Jiang, M. (2025). ArmBCIsys: Robot arm bci system with time–frequency network for multiobject grasping. *IEEE Transactions on Neural Networks and Learning Systems*, 1–15. Retrieved from https://doi.org/10.1109/TNNLS.2025.3579332 doi: 10.1109/TNNLS.2025.3579332

Zarei, A., & Asl, B. M. (2022a). Automatic detection of code-modulated visual evoked potentials using novel covariance estimators and short-time EEG signals. *Computers in Biology and Medicine*, 105771. Retrieved from https://doi.org/10.1016/j.compbiomed.2022.105771 doi: 10.1016/j.compbiomed.2022.105771

Zarei, A., & Asl, B. M. (2022b). Classification of code-modulated visual evoked potentials using adaptive modified covariance beamformer and EEG signals. *Computer Methods and Programs in Biomedicine*, *221*, 106859. Retrieved from https://doi.org/10.1016/j.cmpb.2022.106859 doi: 10.1016/j.cmpb.2022.106859

Zhao, H., Wang, Y., Liu, Z., Pei, W., & Chen, H. (2019). Individual identification based on code-modulated visual-evoked potentials. *IEEE Transactions on Information Forensics and Security*, *14*(12), 3206–3216. Retrieved from https://doi.org/10.1109/TIFS.2019.2912272 doi: 10.1109/TIFS.2019.2912272

Zheng, L., Dong, Y., Pei, W., Gao, X., & Wang, Y. (2025). Implementing a calibration-free bci with a large instruction set of 504 targets. *Available at SSRN 5205963*. Retrieved from http://doi.org/10.2139/ssrn.5205963 doi: 10.2139/ssrn.5205963

Zheng, L., Dong, Y., Tian, S., Pei, W., Gao, X., & Wang, Y. (2024). A calibration-free c-VEP based BCI employing narrow-band random sequences. *Journal of Neural Engineering*, *21*, 026023. Retrieved from https://doi.org/10.1088/1741-2552/ad3679 doi: 10.1088/1741-2552/ad3679

Zheng, L., Pei, W., Gao, X., Zhang, L., & Wang, Y. (2022). A high-performance brain switch based on code-modulated visual evoked potentials. *Journal of Neural Engineering*, *19*, 016002. Retrieved from https://doi.org/10.1088/1741-2552/ac494f doi: 10.1088/1741-2552/ac494f

Zheng, L., Tian, S., Dong, Y., Pei, W., Gao, X., & Wang, Y. (2024). A large dataset for VEP based brain-computer interfaces employing narrow-band code modulation and frequency-phase modulation. *Brain-Apparatus Communication: A Journal of Bacomics*, *3*(1), 2383860. Retrieved from https://doi.org/10.1080/27706710.2024.2383860 doi: 10.1080/27706710.2024.2383860

Zheng, L., Wang, Y., Pei, W., & Chen, H. (2019). A fast brain switch based on multi-class code-modulated VEPs. In *2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 3058–3061). Retrieved from https://doi.org/10.1109/EMBC.2019.8857617 doi: 10.1109/EMBC.2019.8857617