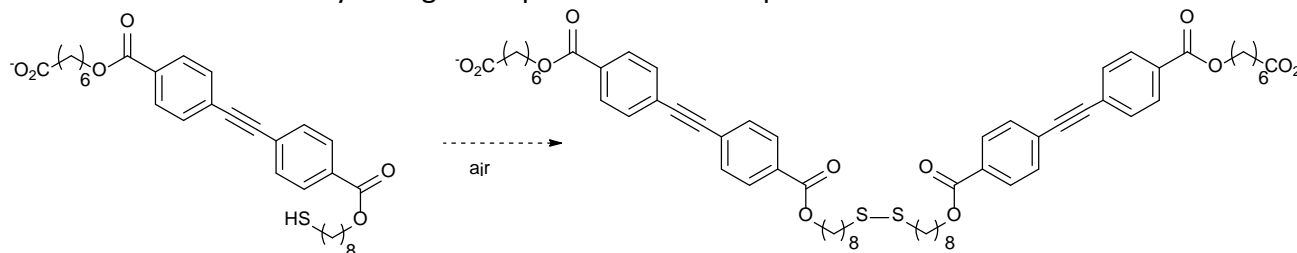


Supporting information for: Dissipative Assembly of an Ion Transport System

Andrew K. Dambeniaks, Paul Vu, Thomas M. Fyles

This file contains summary voltage clamp data for the compound:



It is probable that the sample was sufficiently oxidized that the activity observed is solely of the disulfide.

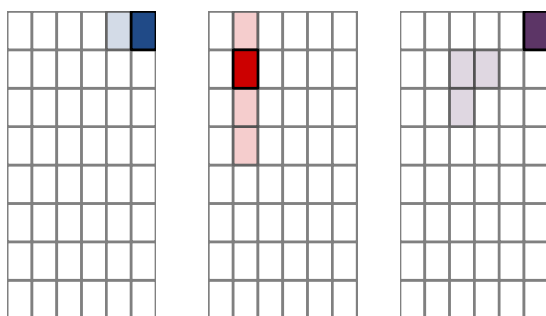
A model BC-525A bilayer clamp (Warner Instrument Corp.) was used for planar bilayer experiments, ClampEx 8 and ClampFit 10 (Axon Instruments) were the software used for acquisition and analysis, respectively. Cups used were made of polystyrene and had 250 μm diameter apertures (Warner Instrument Corp). The lipid used in all cases was diphytanoyl phosphatidylcholine (diPhyPC) (Avanti Polar lipids). A stock solution of 25 mg/mL lipid in CHCl_3 was dried under N_2 and then re-suspended in 200 μL decane. For experiments involving pre-loading into the lipid, 0.1 – 1 mol% compound in CHCl_3 was added to the lipid mix and then dried down. The electrolytes used were 1 M CsCl in 10 mM HEPES, 10 mM TRIS, pH 7. The aperture was primed with 0.5-1 μL of decane/lipid, excess solvent was removed by blowing N_2 over the aperture. The cup was then placed into the electrolyte-filled holding cell, consisting of 5 mL and 3 mL chambers, and salt bridges (KNO_3 or KCl/Agar) and electrodes (Ag/AgCl) were attached. Bilayers were formed by brushing on 1- 1.5 μL of the decane/lipid mix over the aperture, and were monitored for stability, capacitance and resistance for at least 20 minutes before channel-forming compound was added. Once formed, 'activity' from pristine bilayers was never observed. Bilayers were tested repeatedly for capacitance and resistance.

Compounds were usually added by injection from acetonitrile or THF solution (typically no more than 10 μL of solution). In some cases to ensure physical mixing, a formed lipid-only bilayer was broken by brushing on the compound- lipid mix followed by reforming the bilayer.

All data were hardware filtered (8- pole Bessel filter, 1 kHz) and digitized. Data were collected in a survey mode using the Gap-free protocol. Reported activity grids were prepared as described previously^{1,2}.

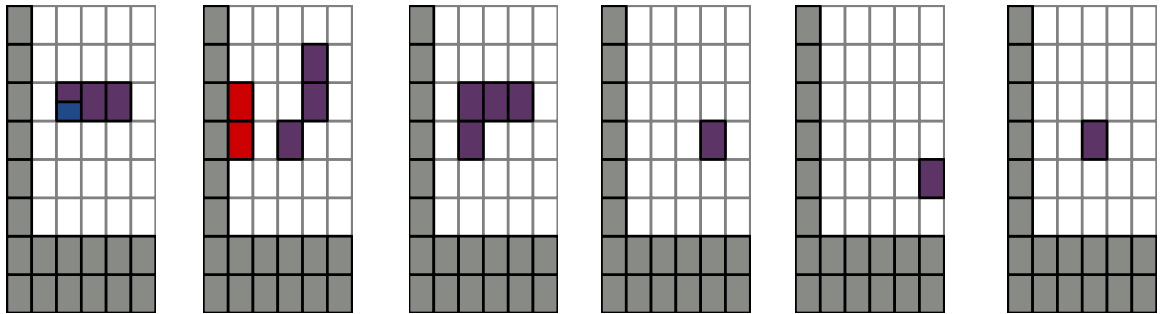
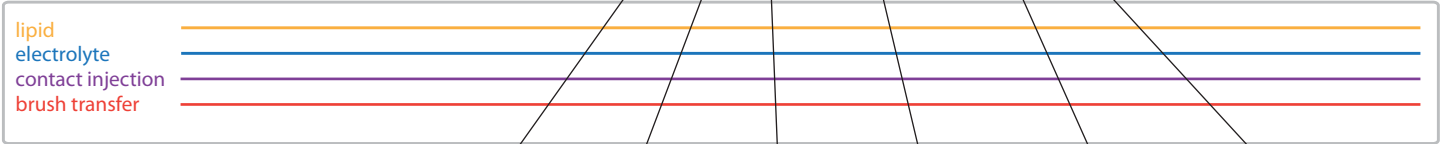
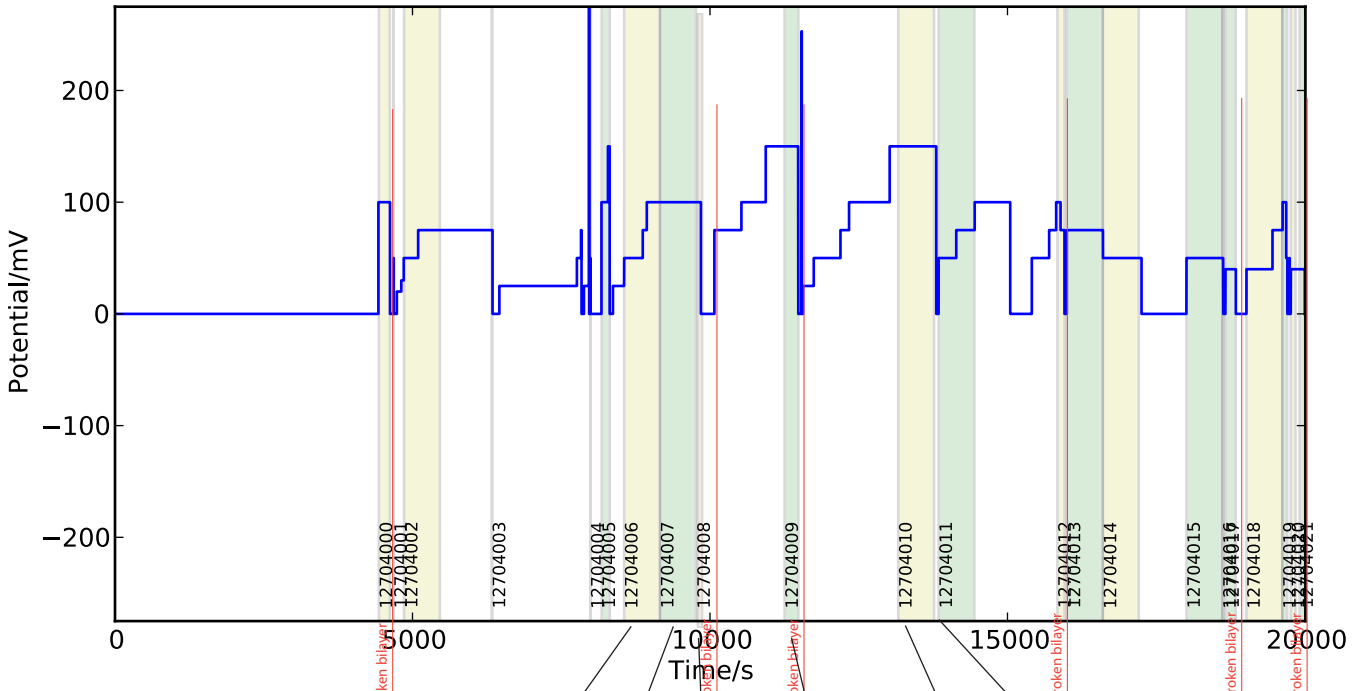
1. J. K. W. Chui and T. M. Fyles, *Chem. Soc. Rev.*, 2012, **41**, 148-175.
2. J. K. W. Chui, T. M. Fyles and H. Luong, *Beilstein J. Org. Chem.*, 2011, **7**, 1562-1569.

Overall summary of activity of 6A8S(H)

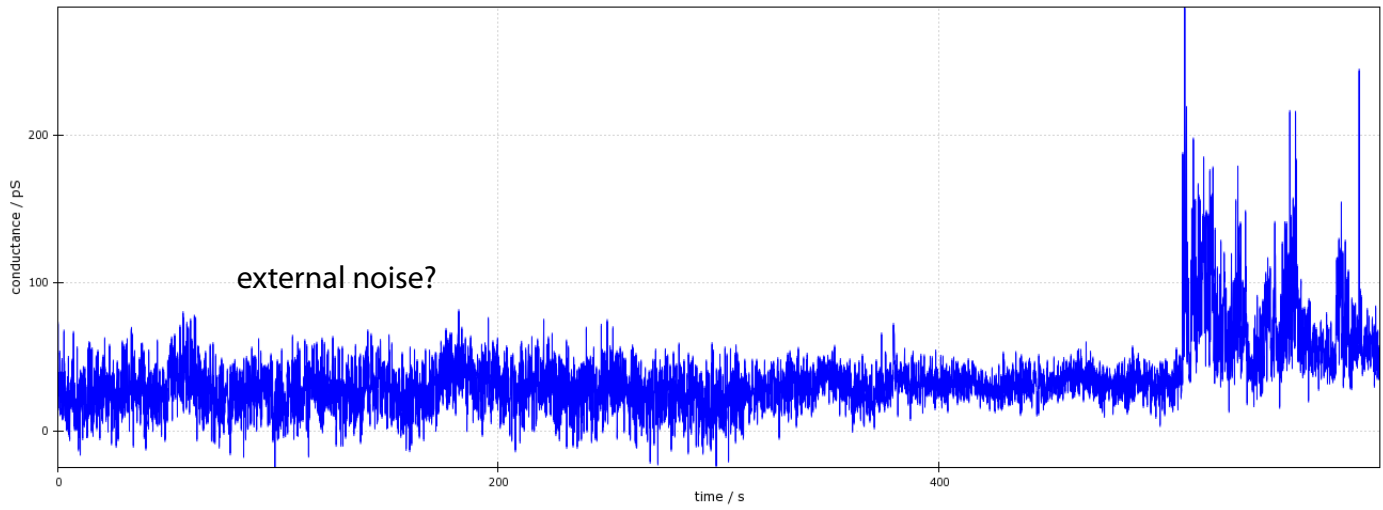


color density indicates frequency of occurrence in the overall dataset

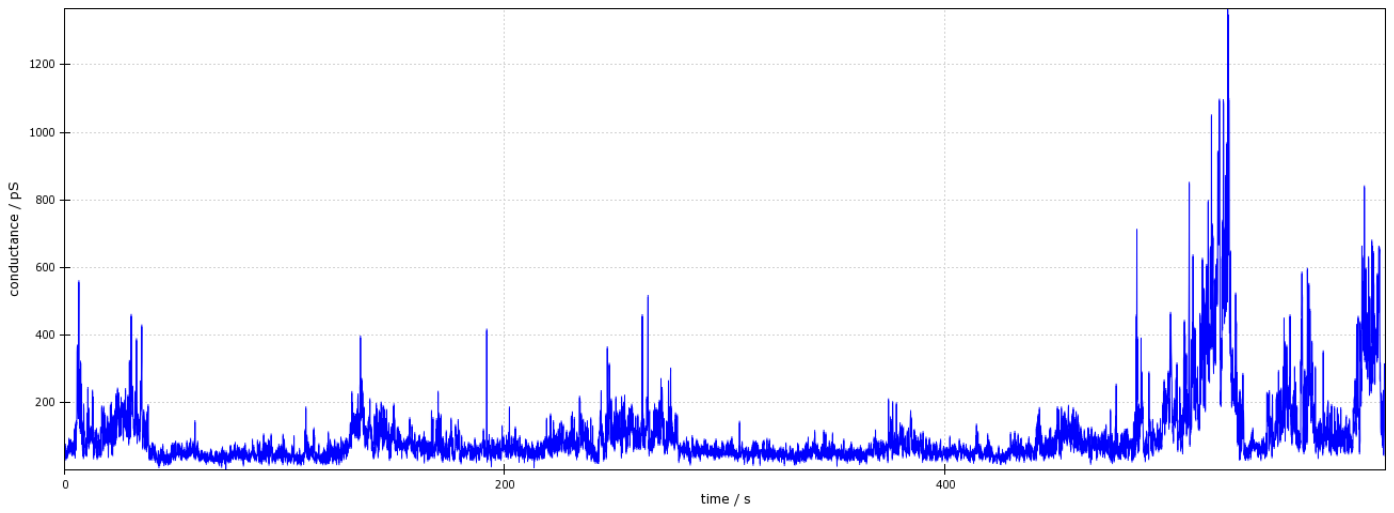
AKD-25 [6A8S H] {07-04-2012} 1M CsCl THF ox



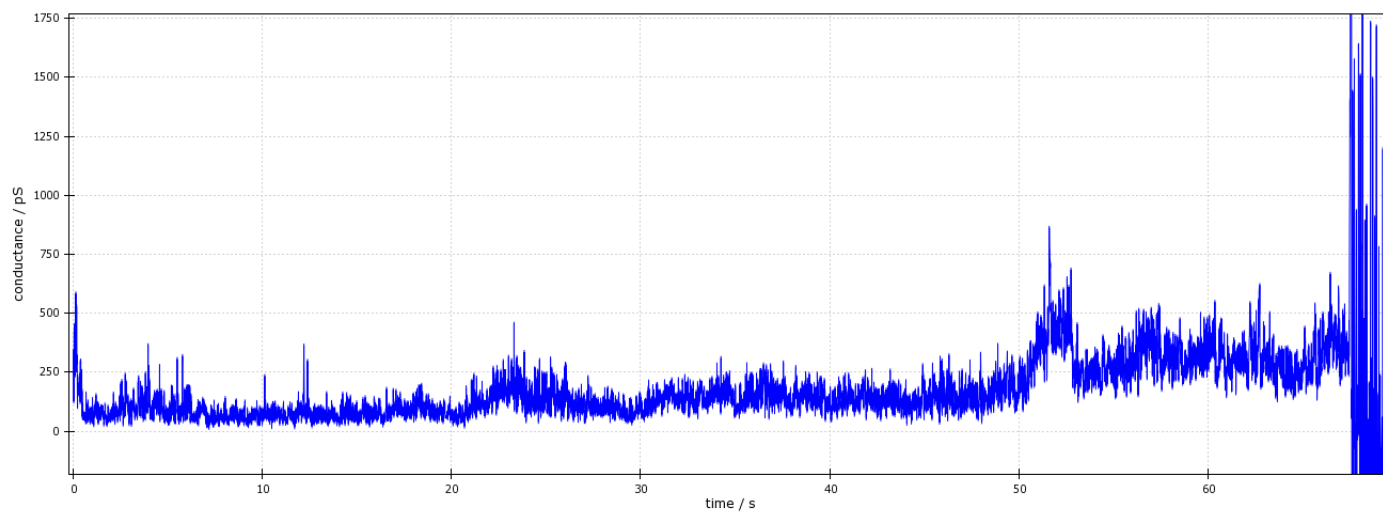
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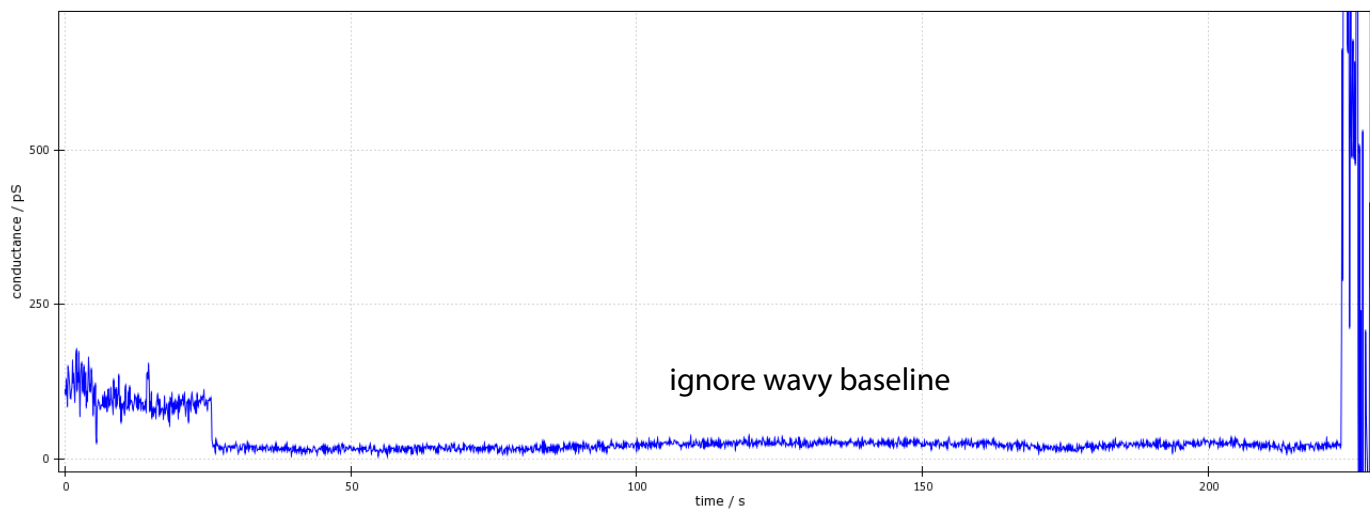
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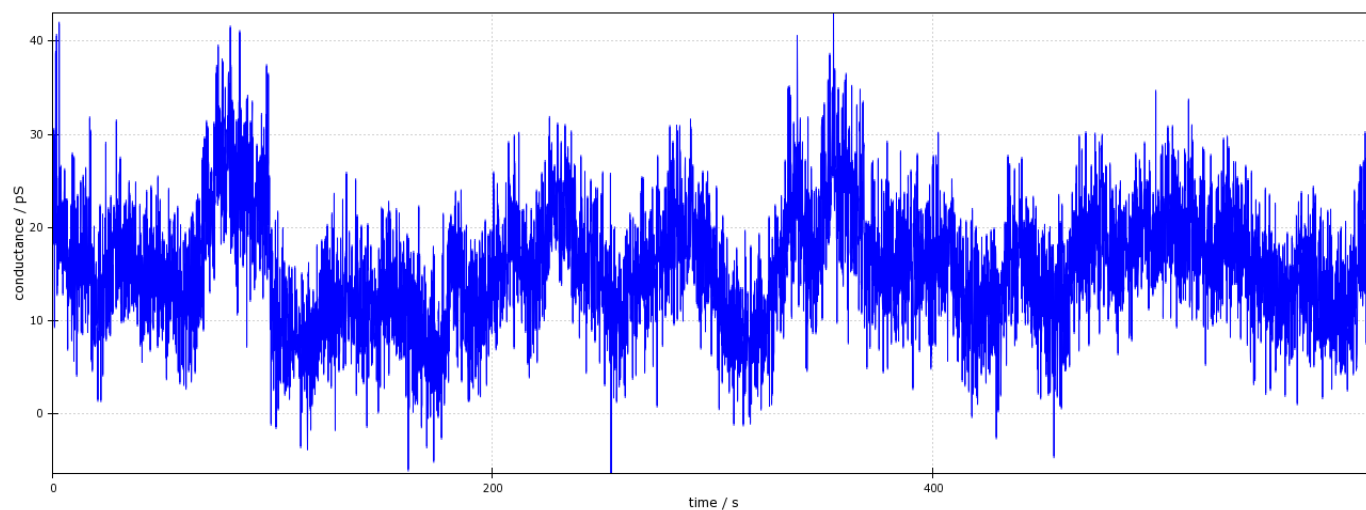
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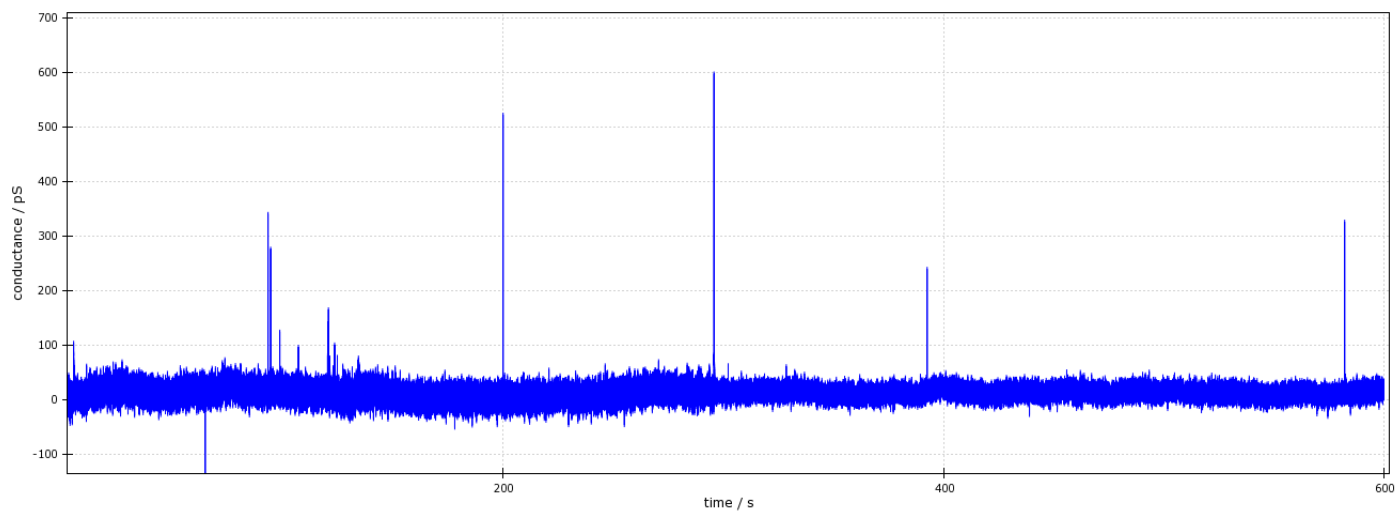
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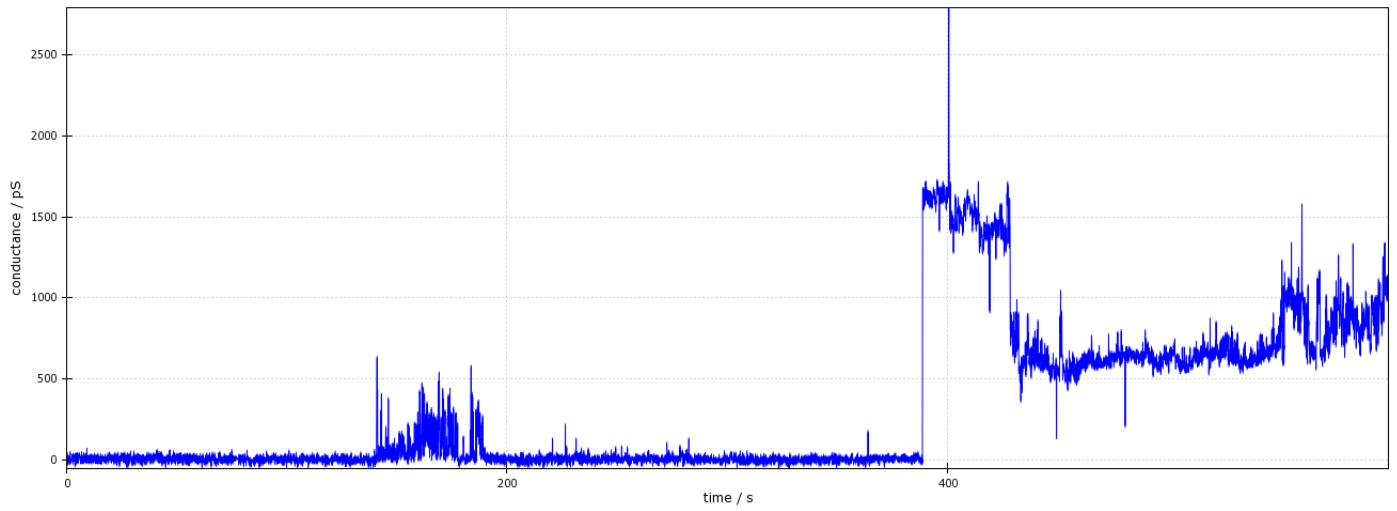
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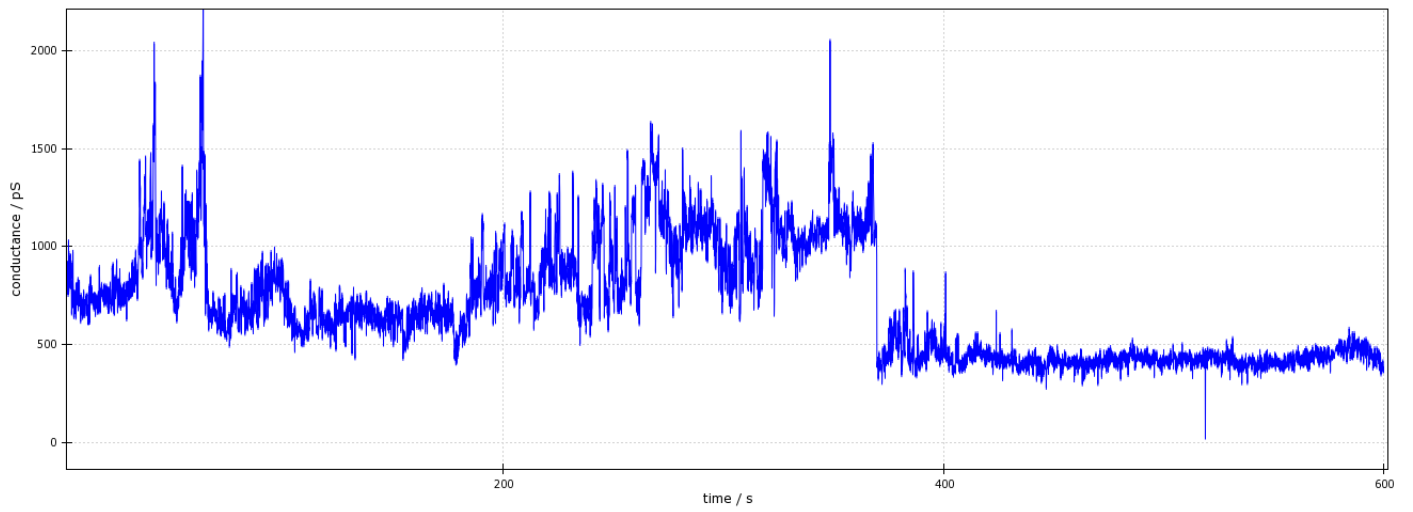
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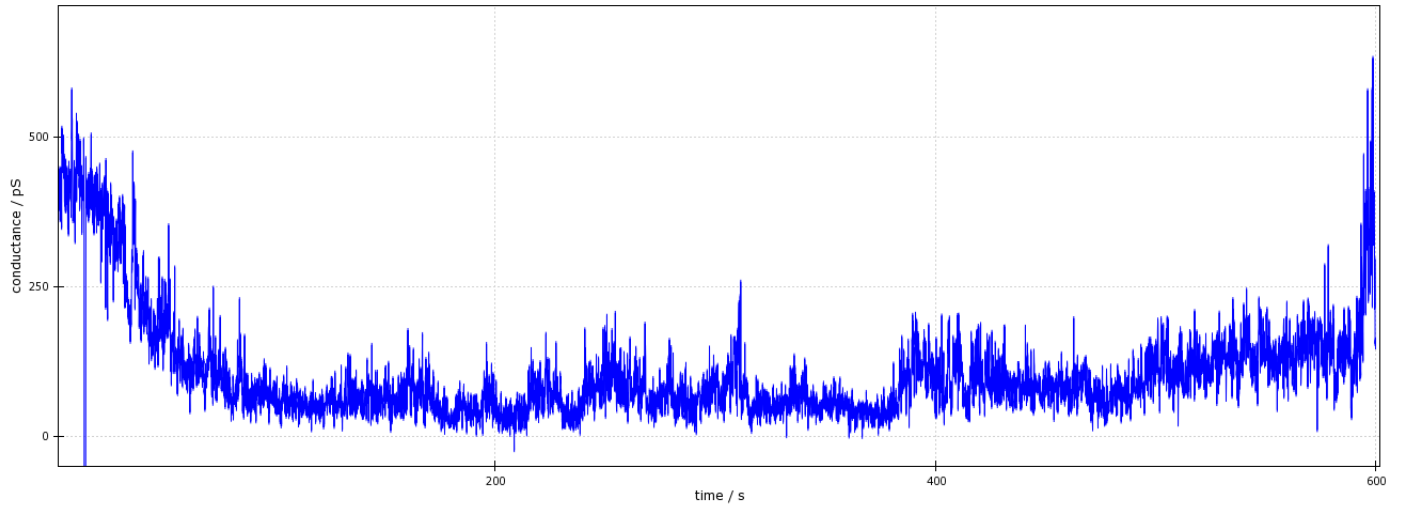
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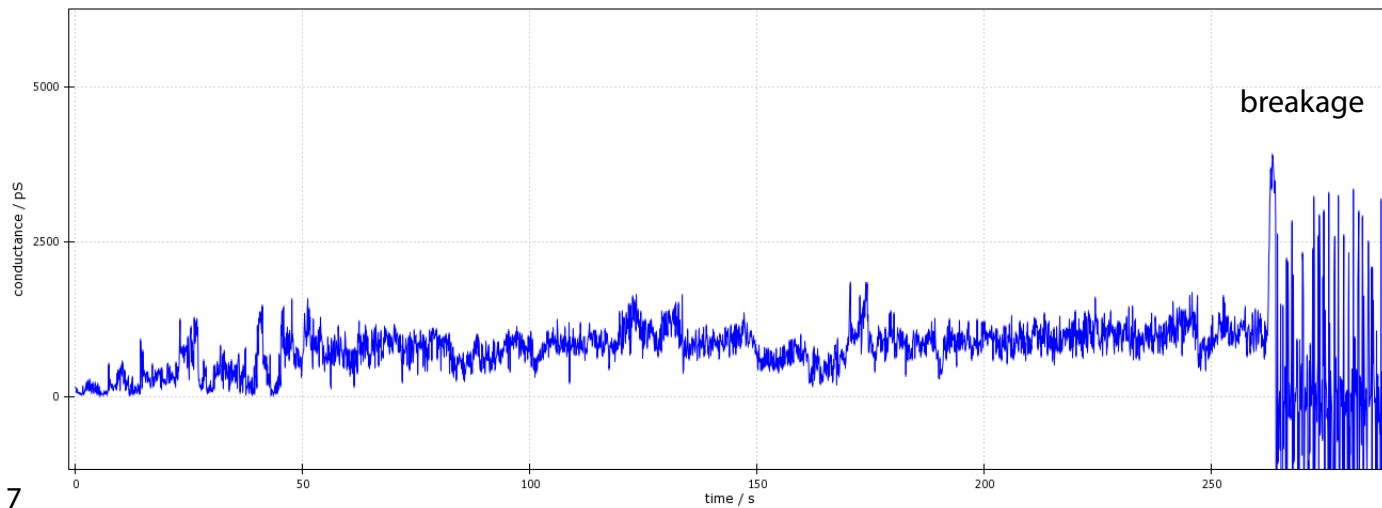
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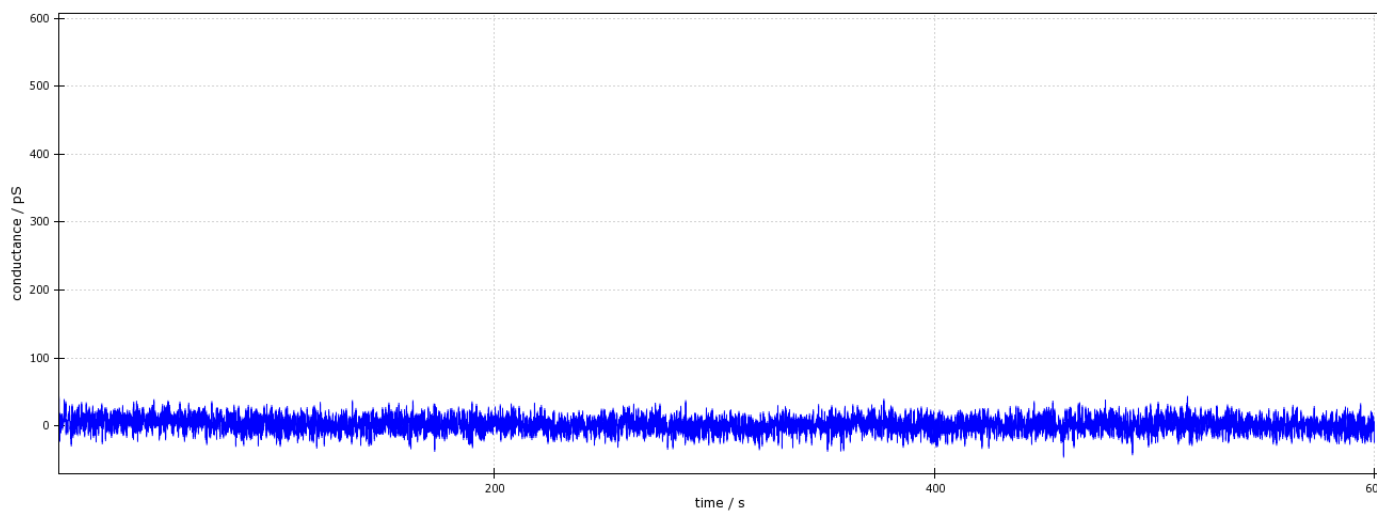
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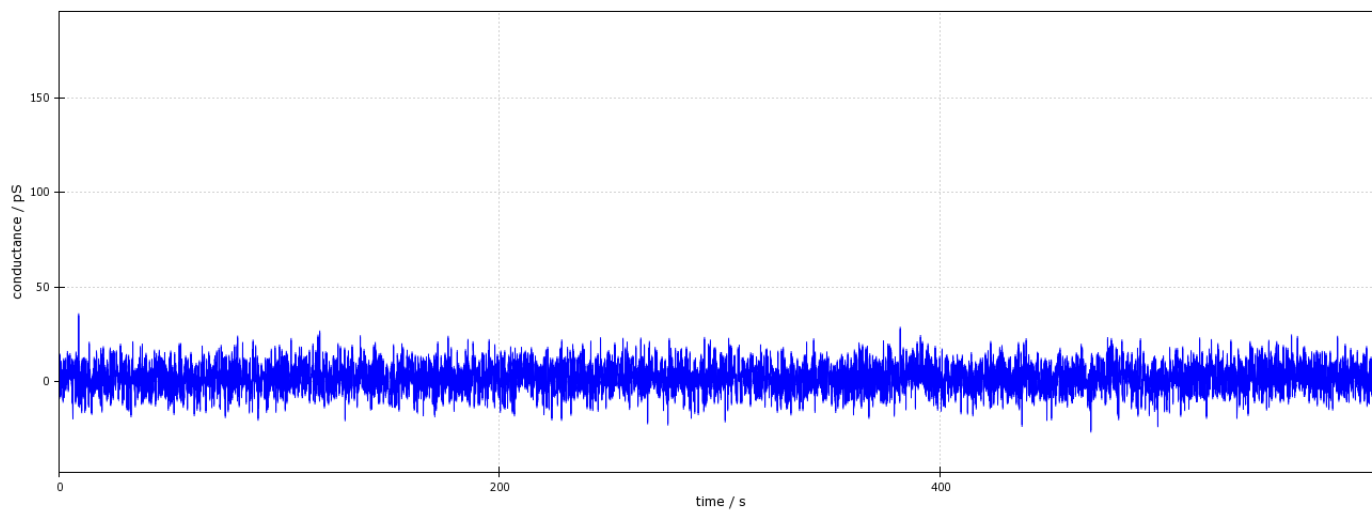
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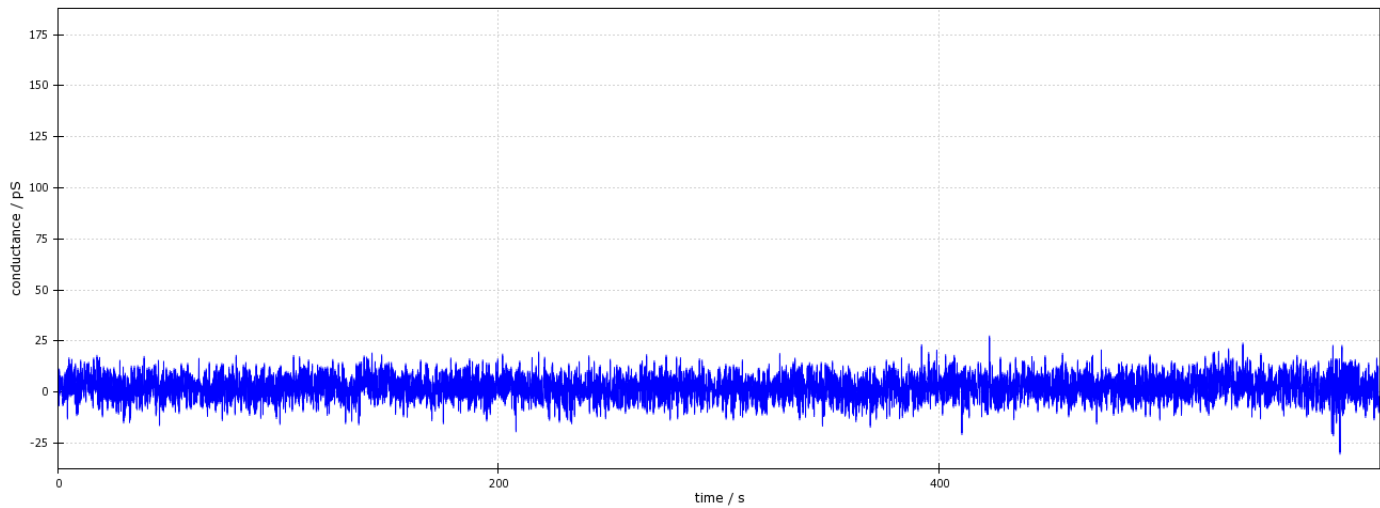
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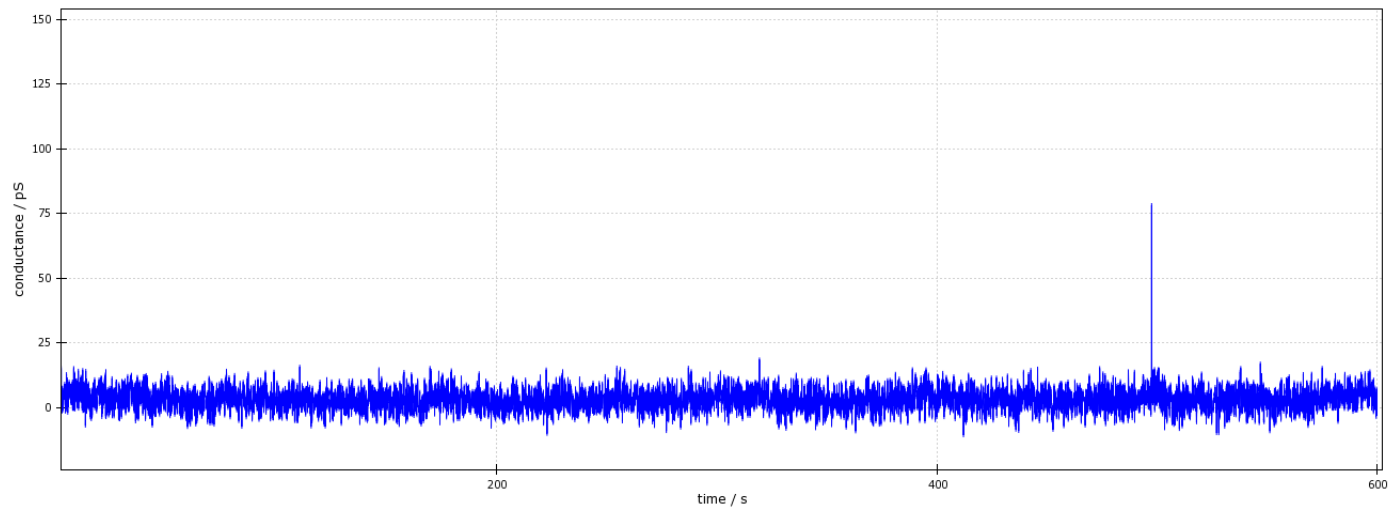
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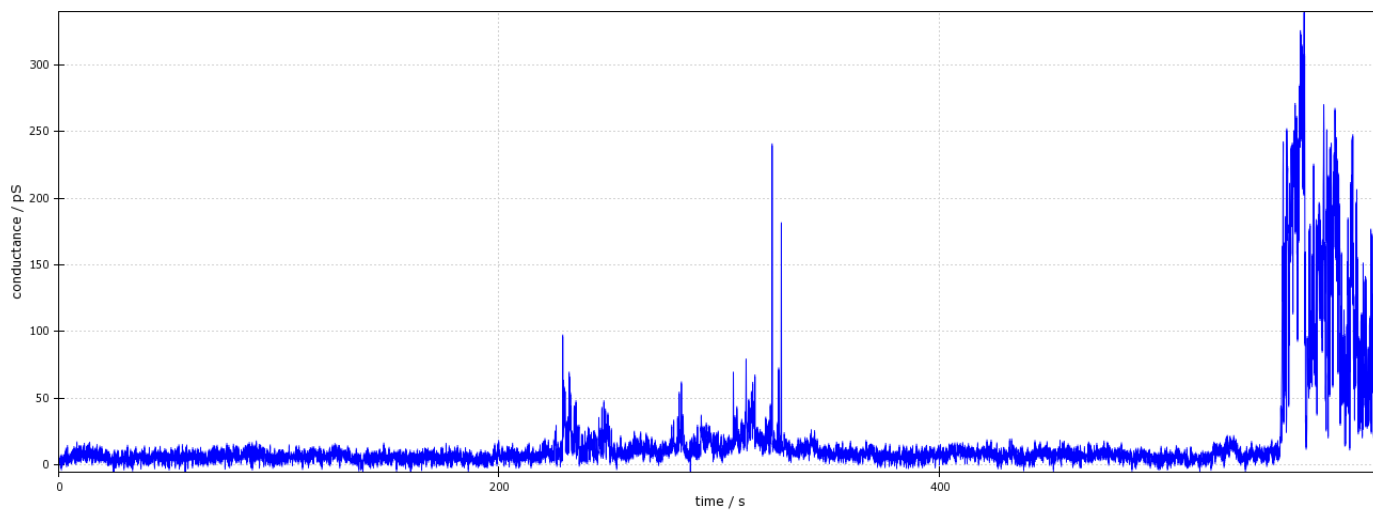
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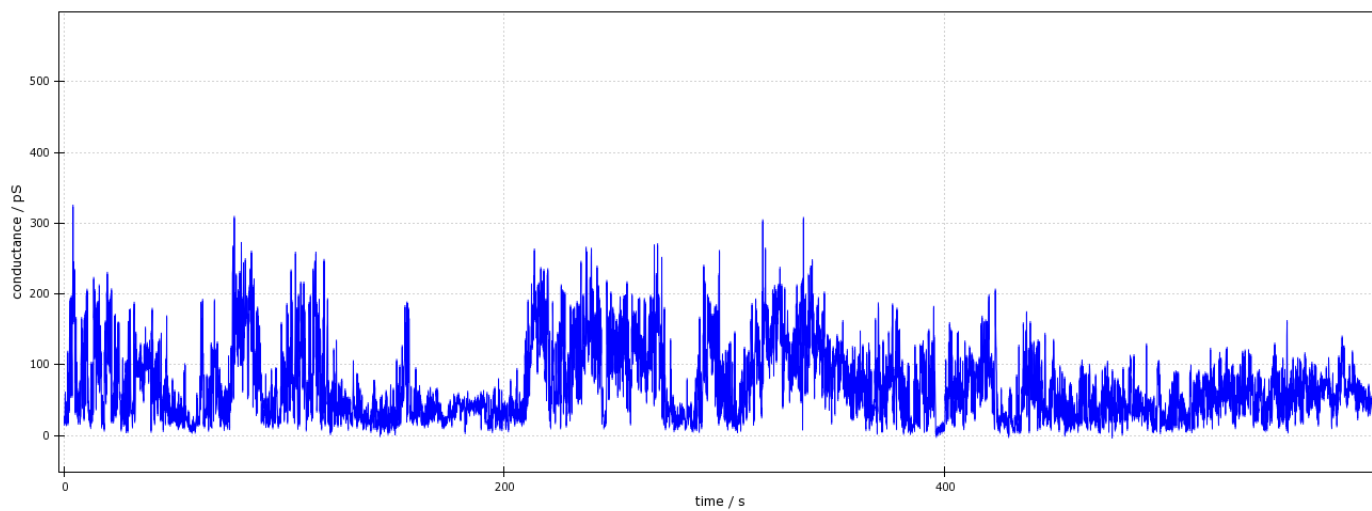
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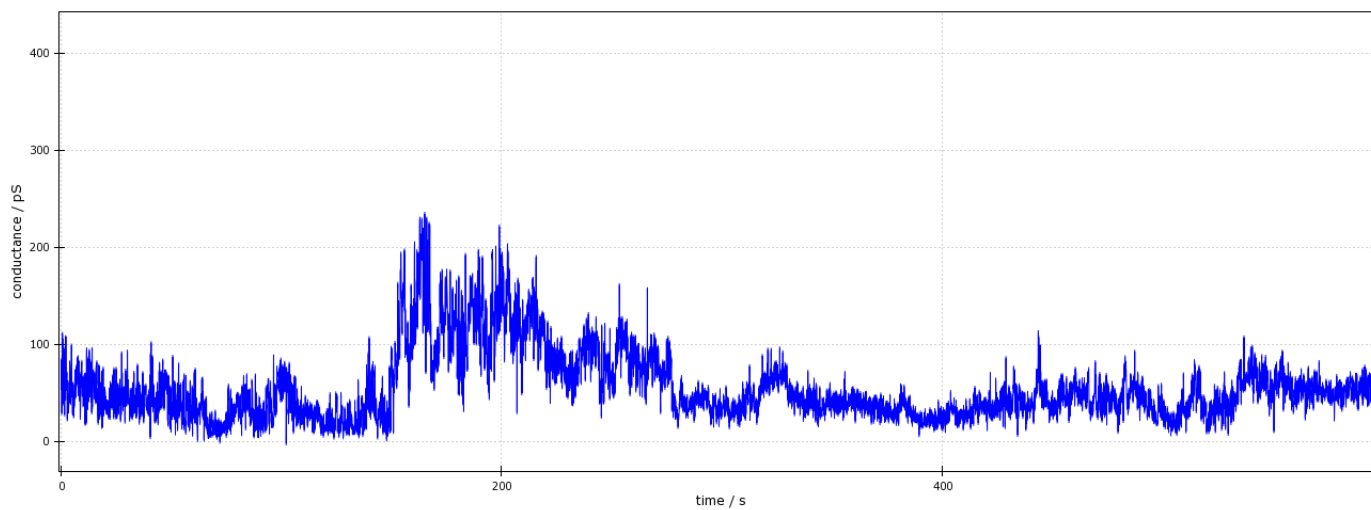
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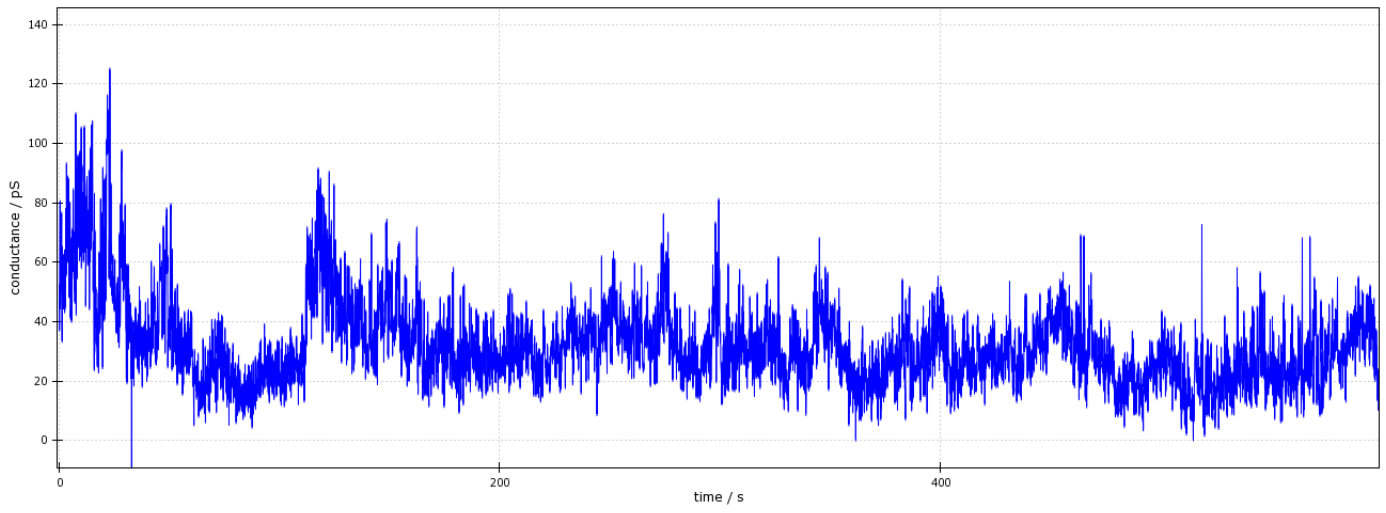
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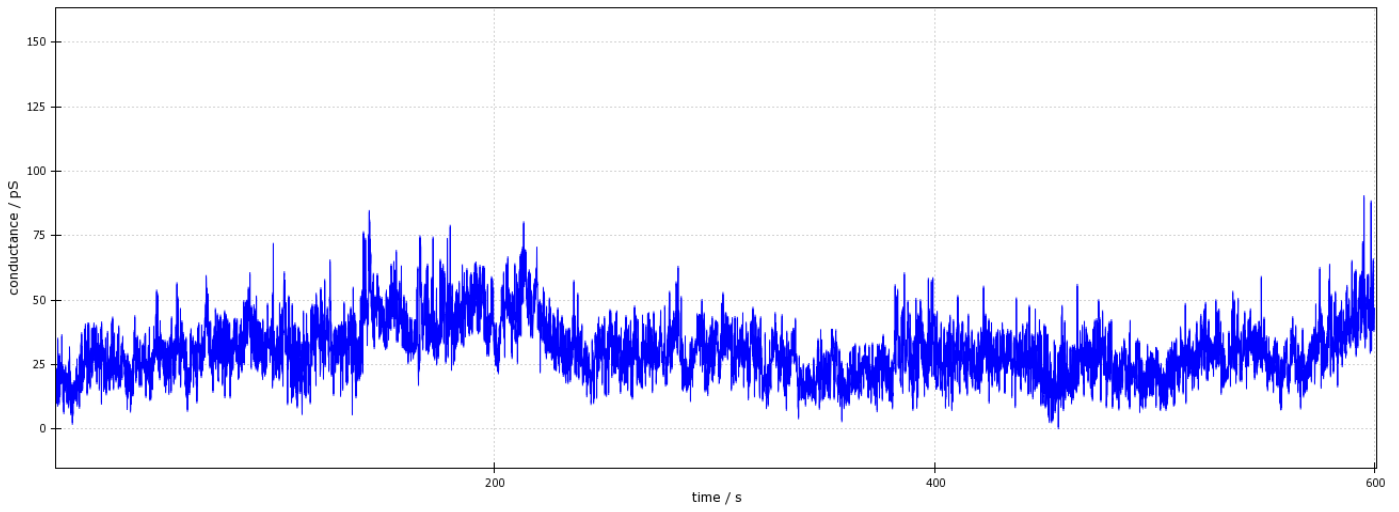
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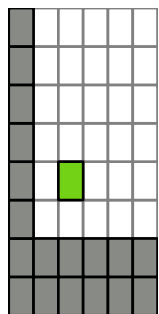
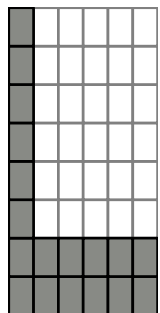
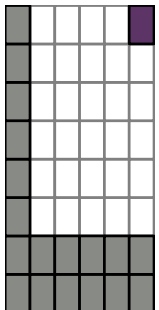
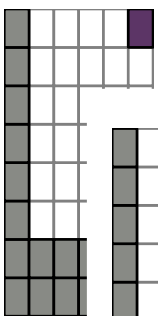
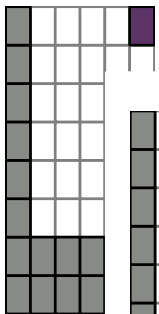
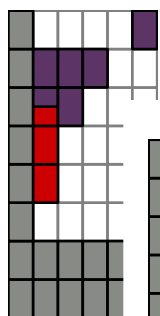
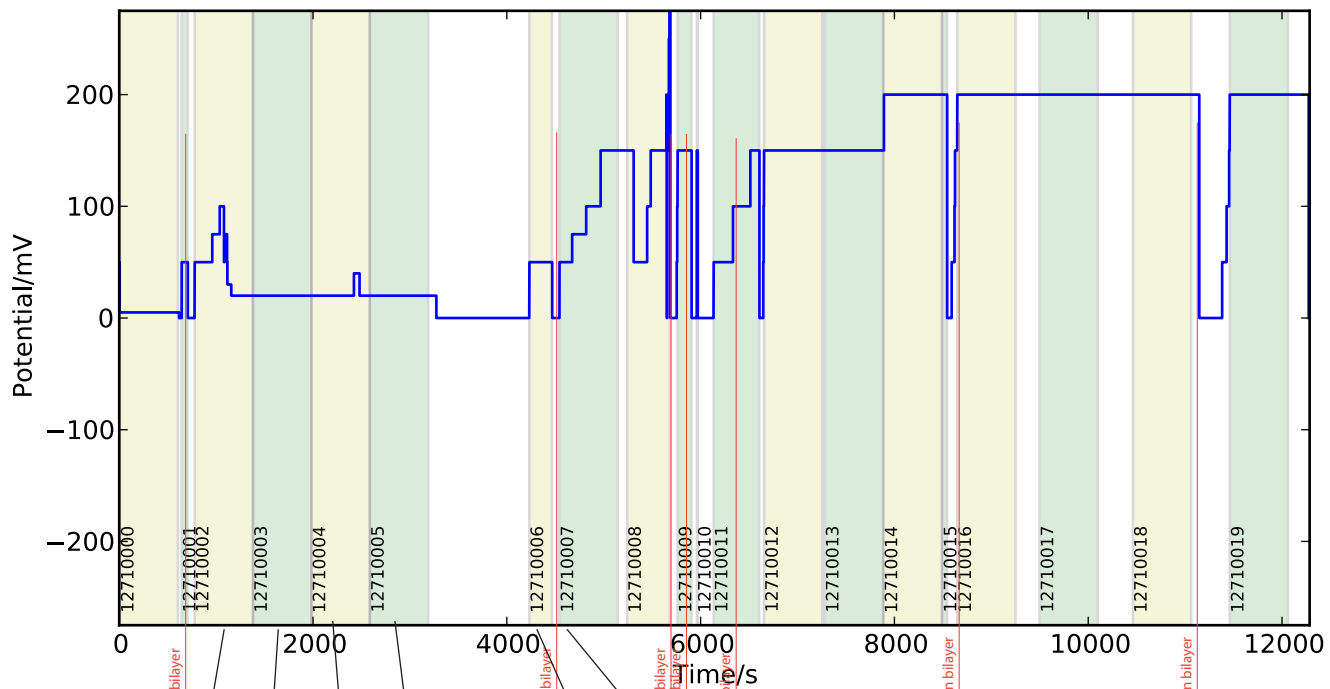
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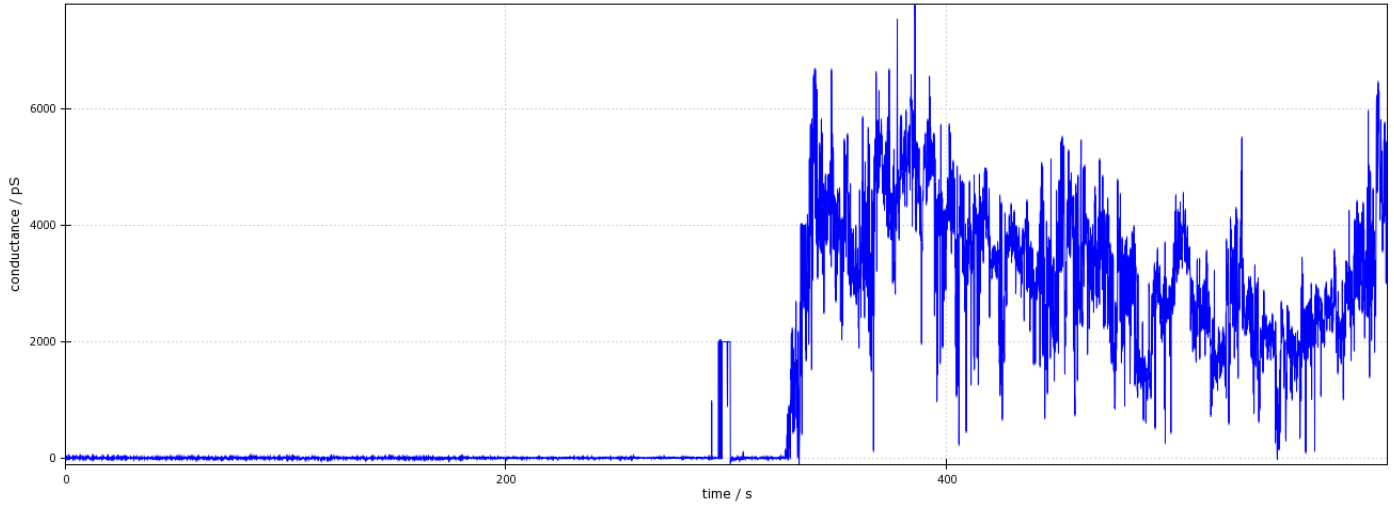
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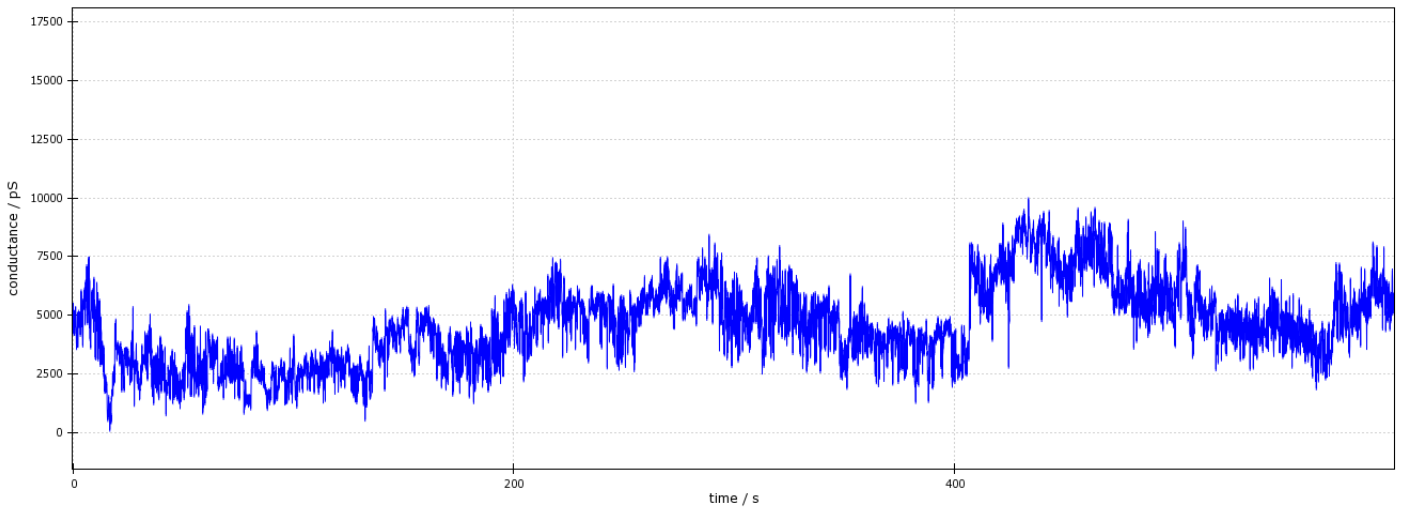
AKD-29 [6A8SH] {07-10-2012} 1M CsCl DTE pulse (1)



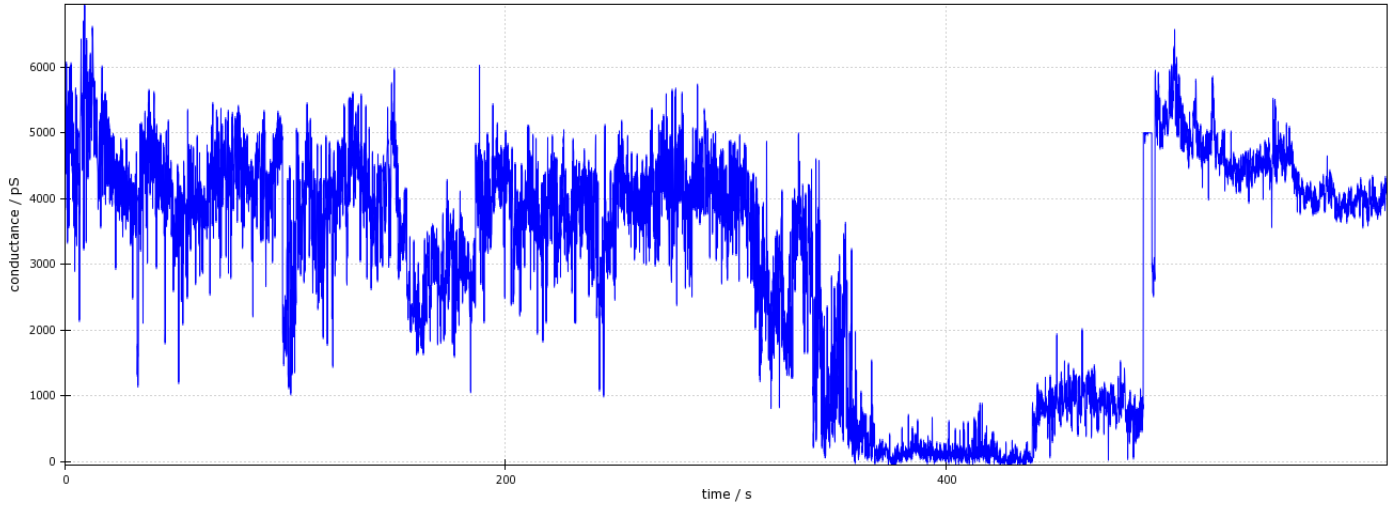
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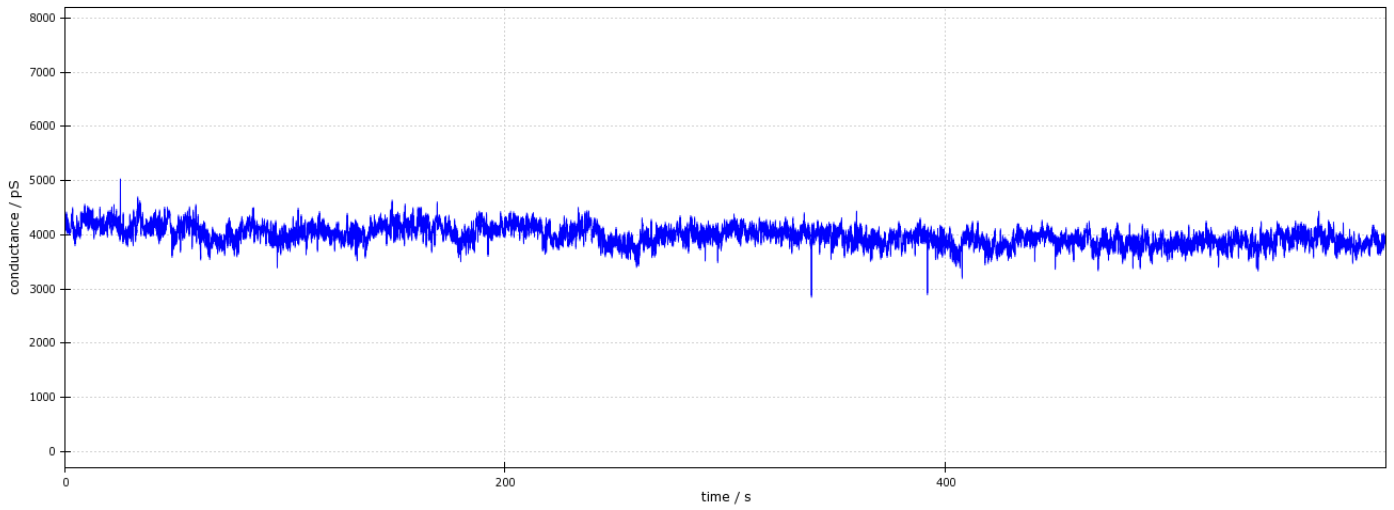
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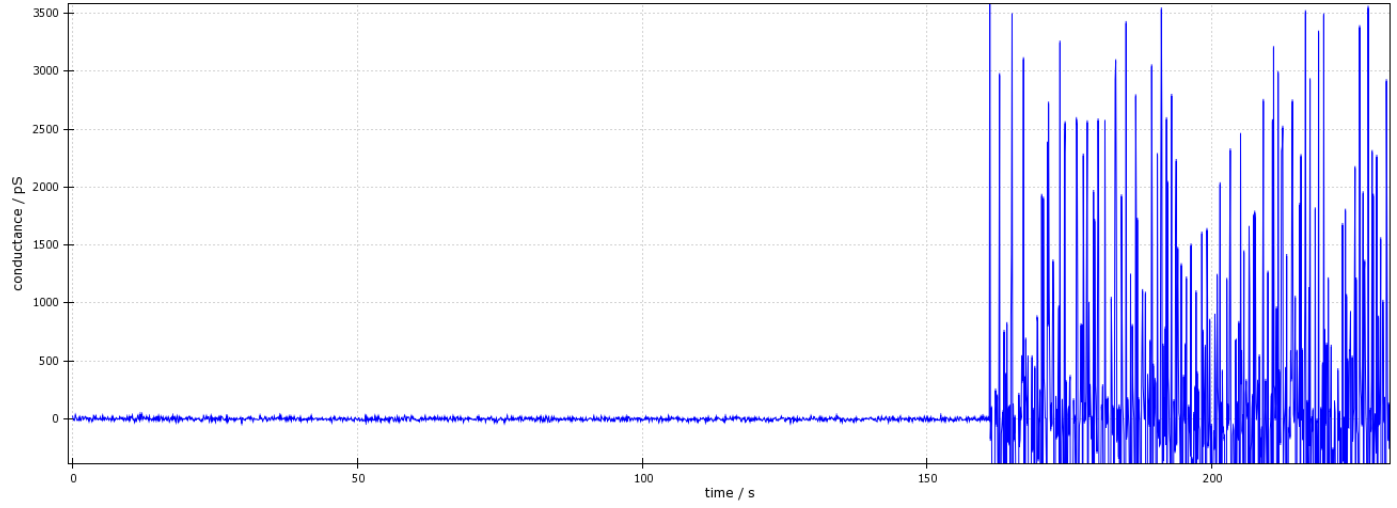
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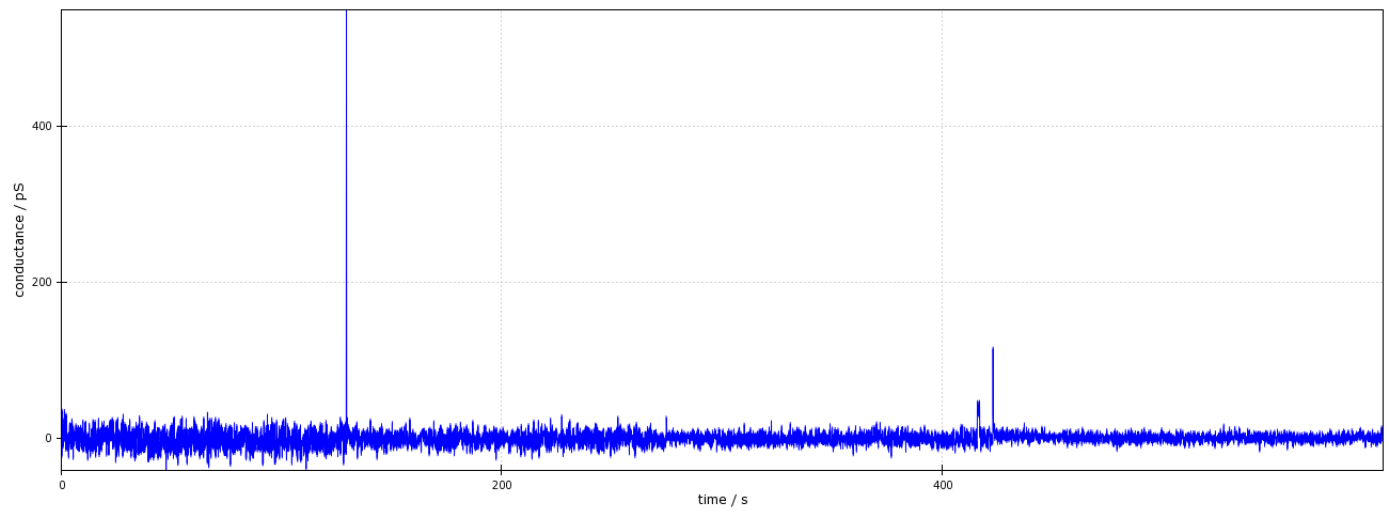
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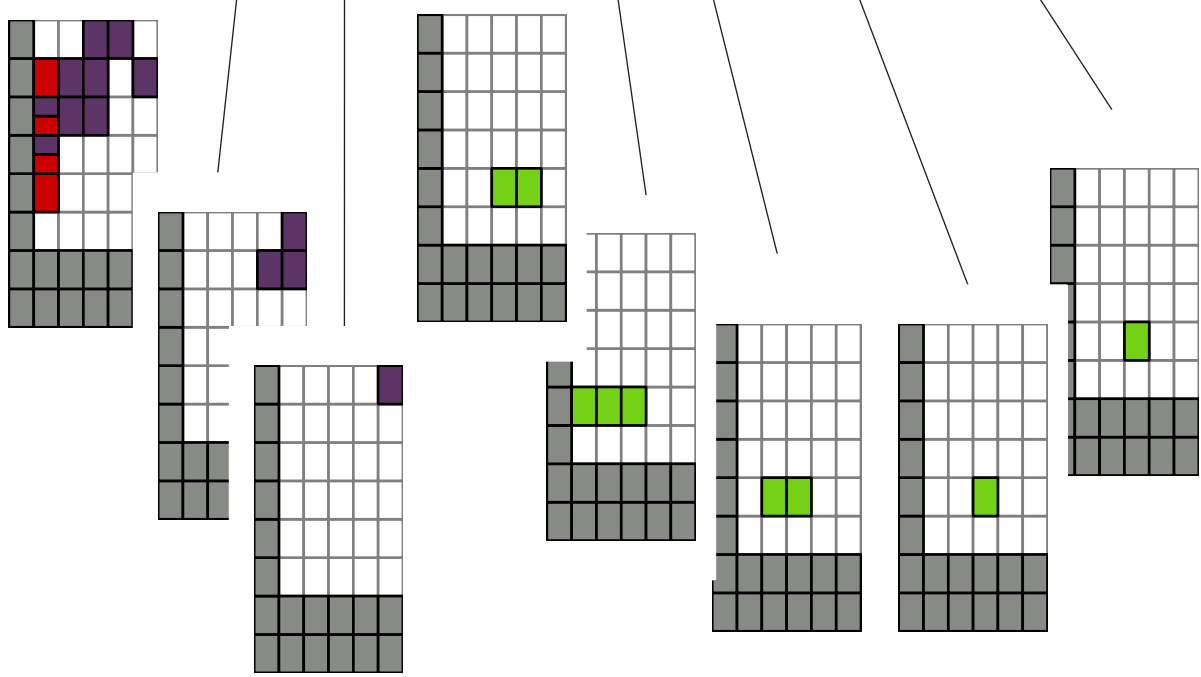
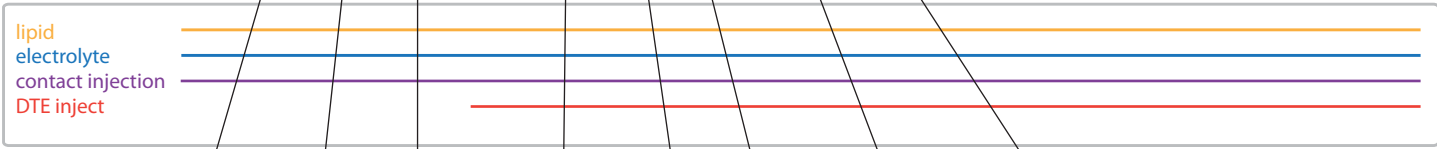
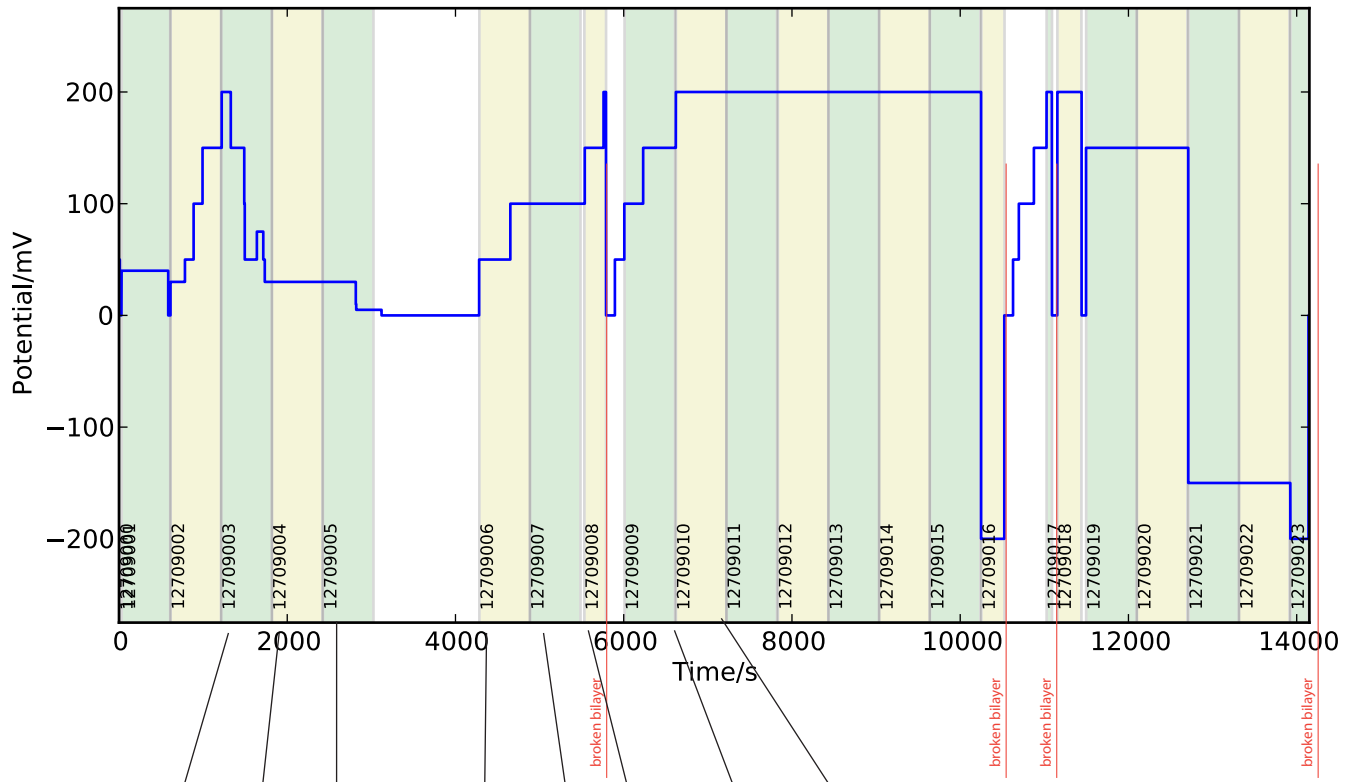
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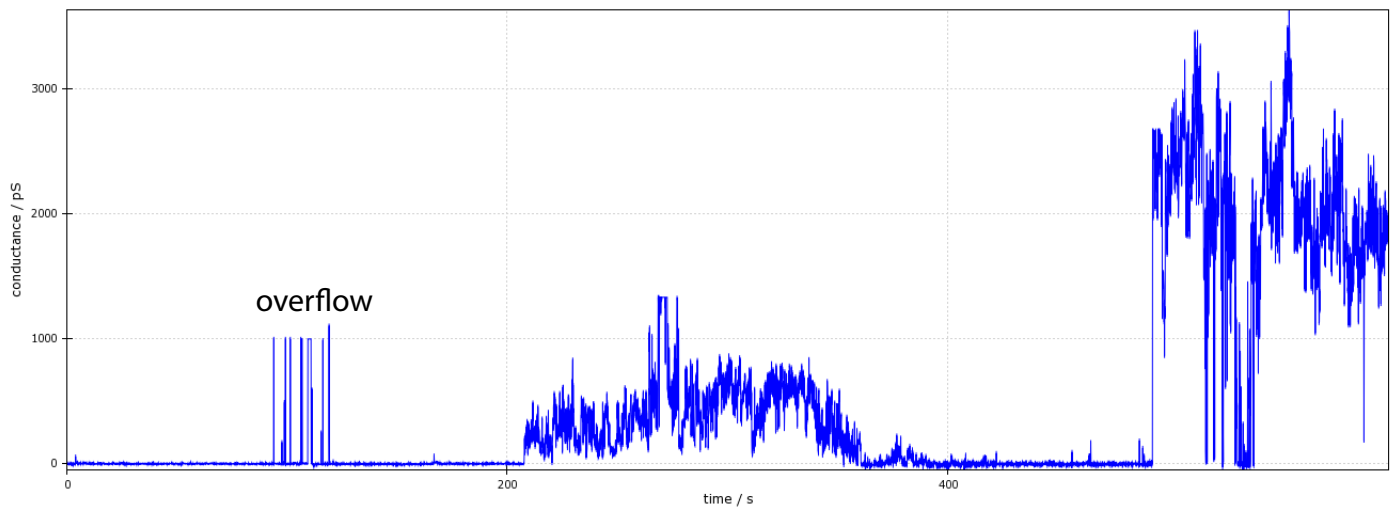
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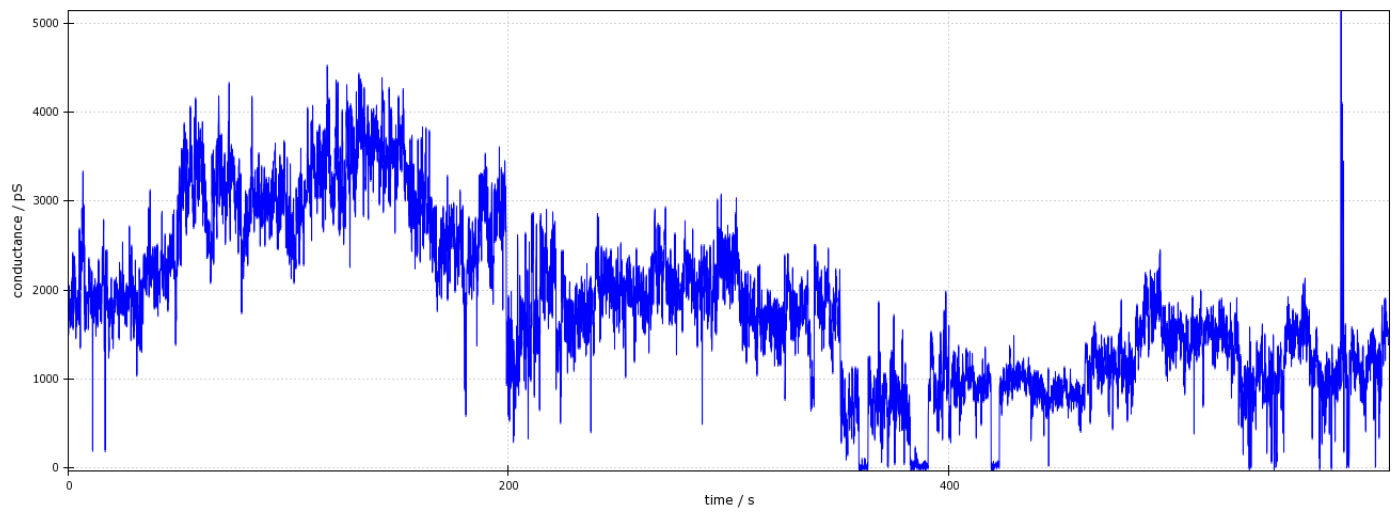
AKD-28 [6A8S H] {07-09-2012} 1M CsCl DTE



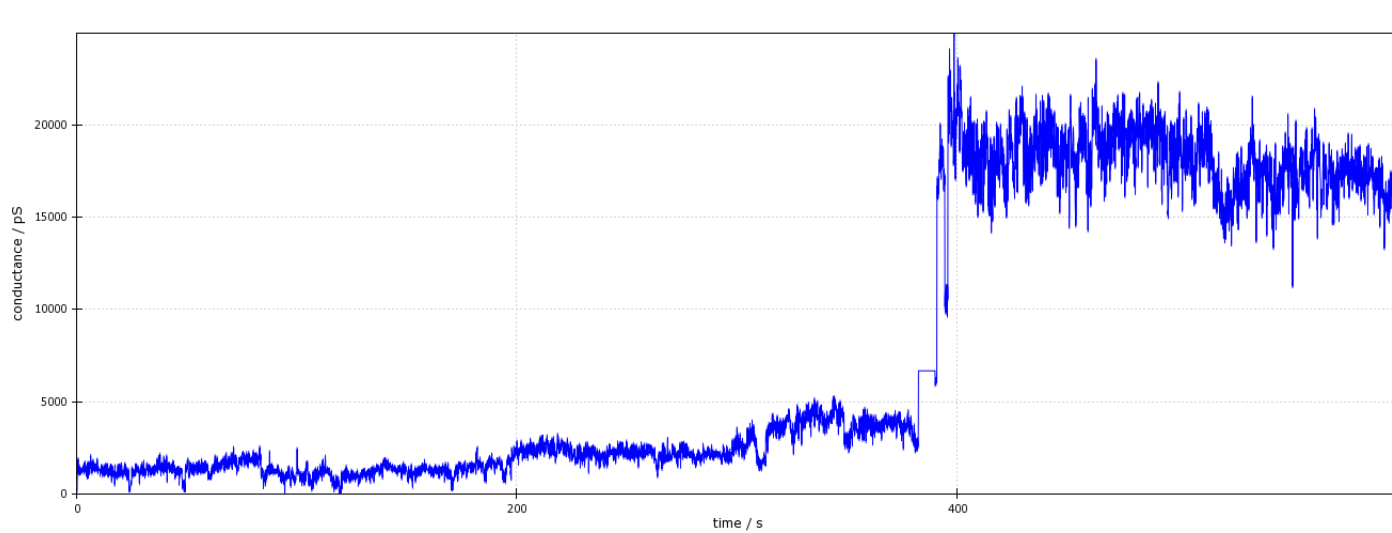
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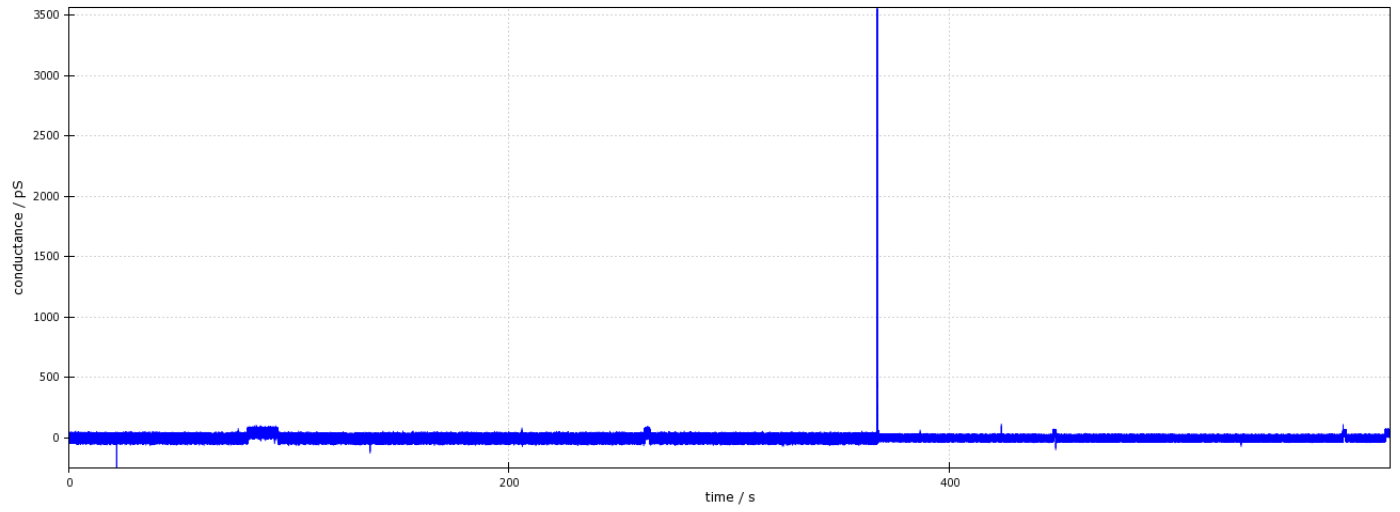
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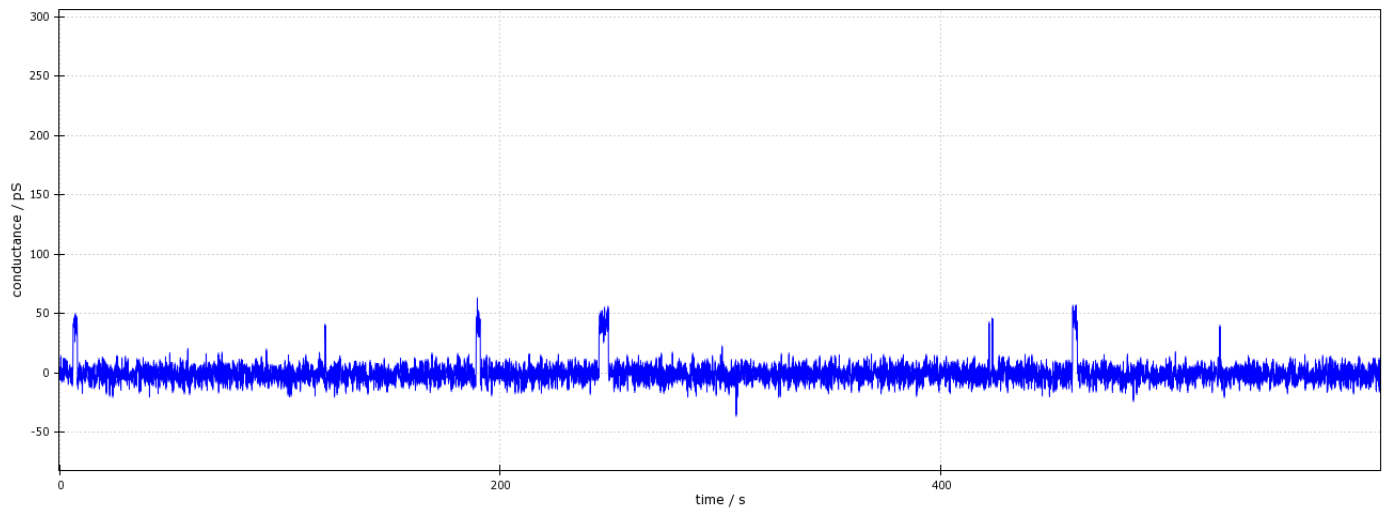
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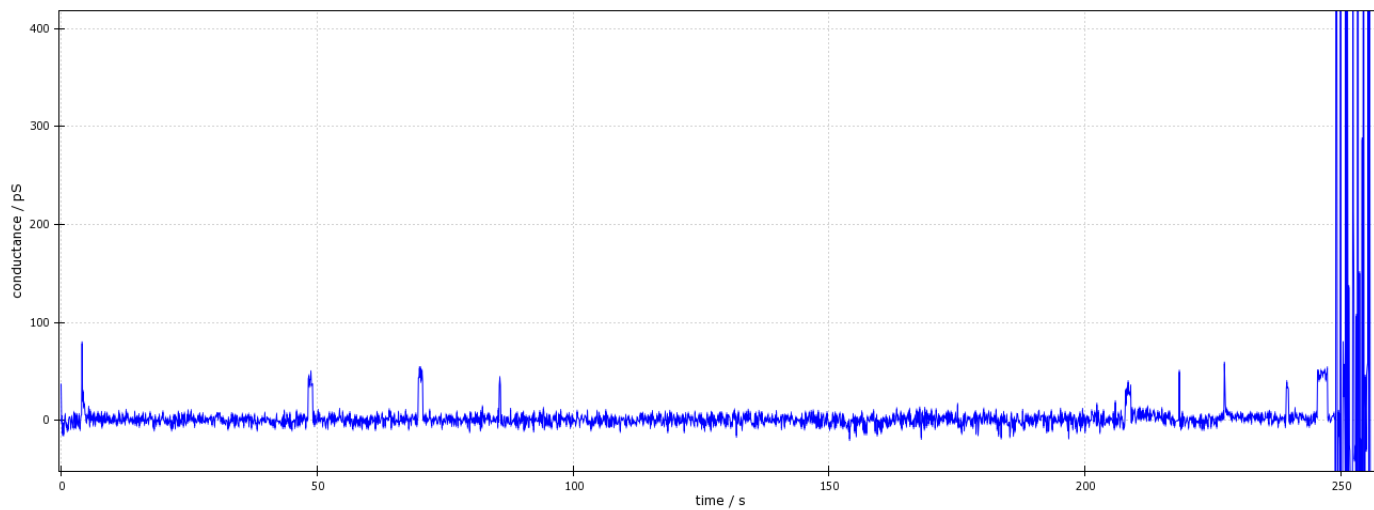
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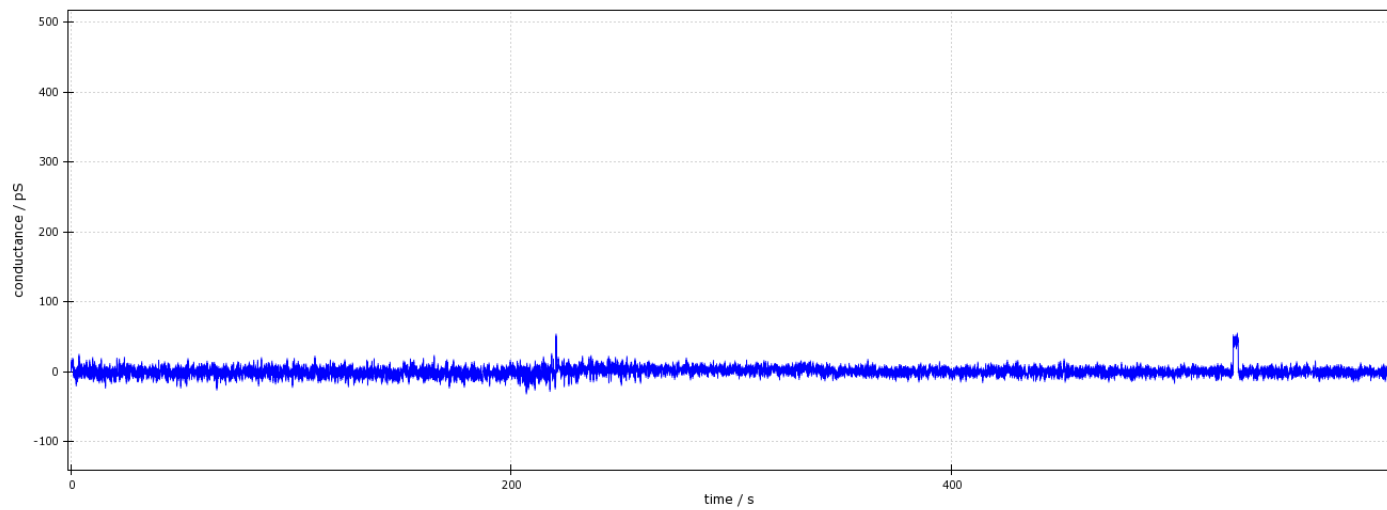
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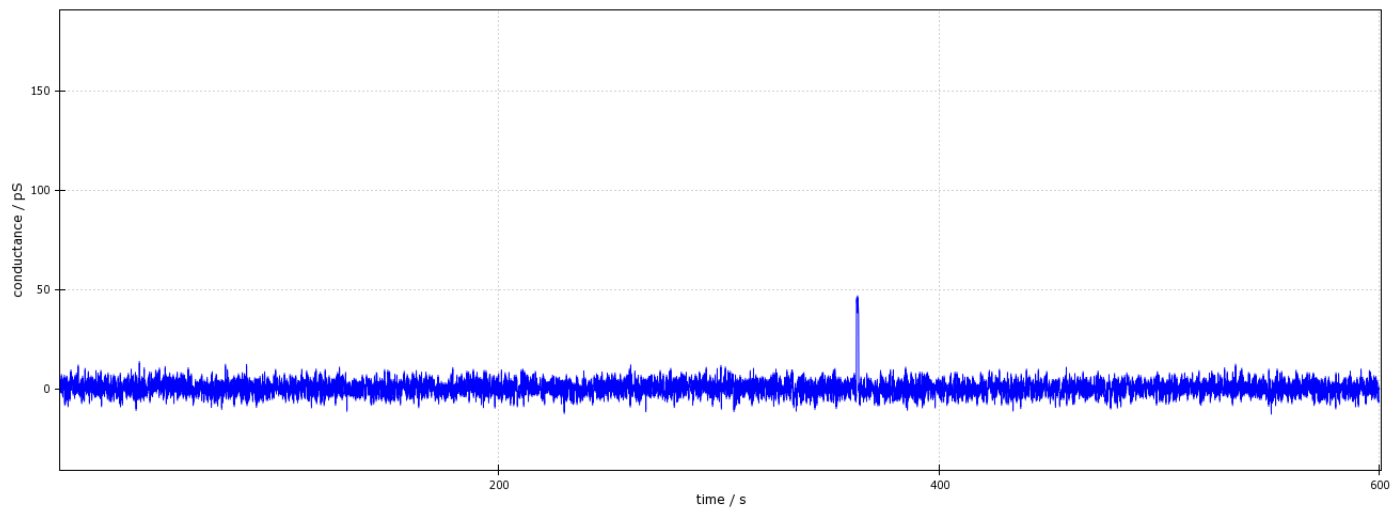
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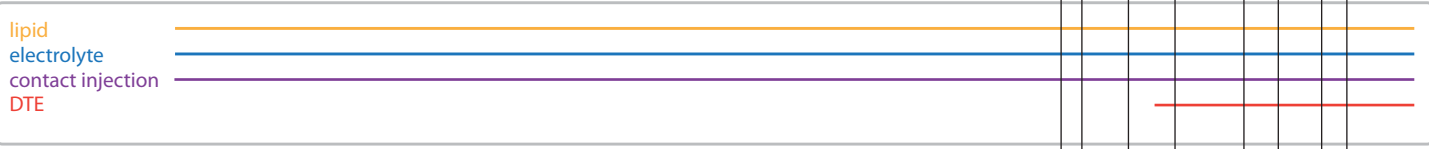
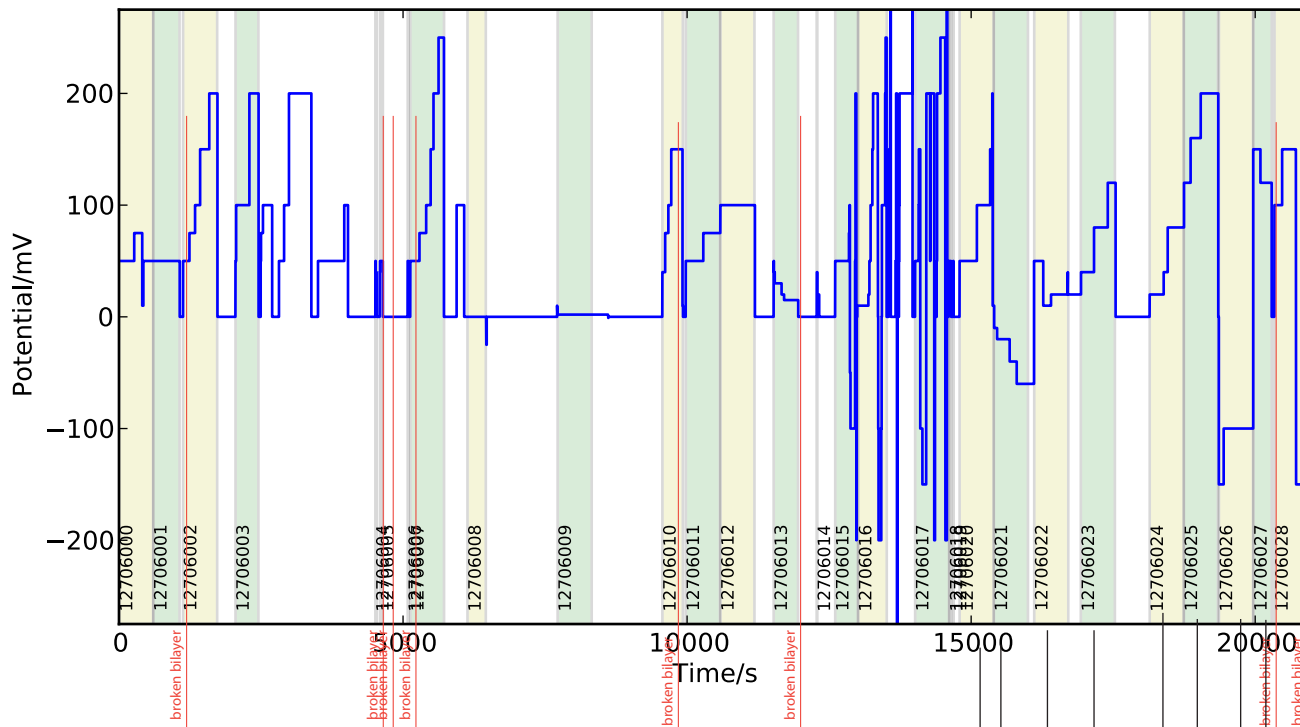
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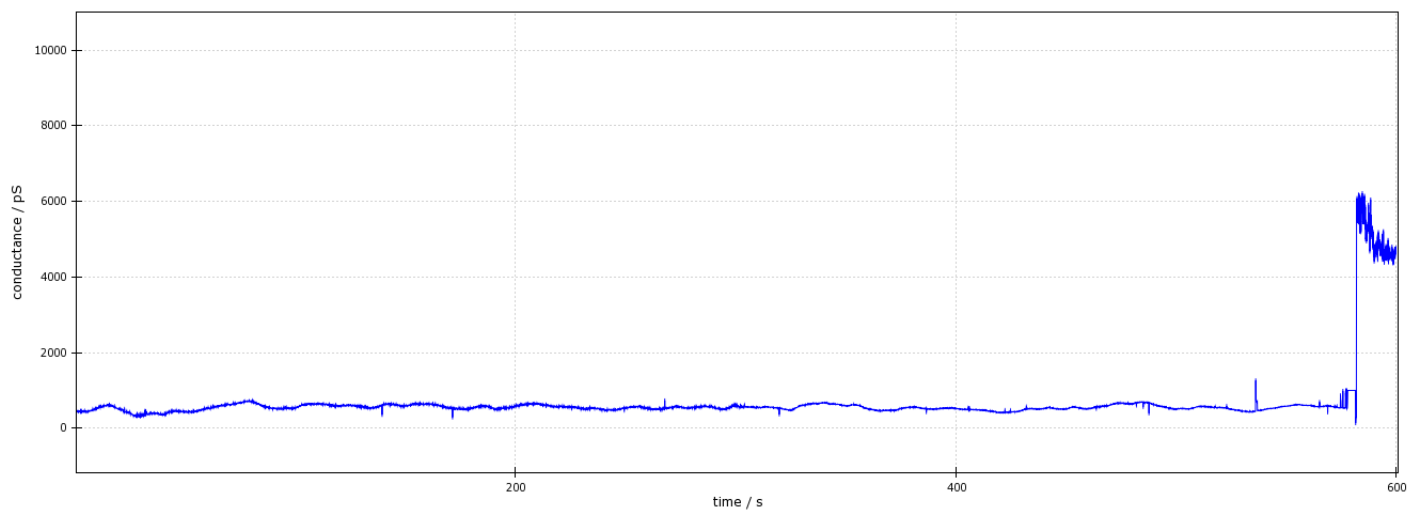


AKD-27 [6A8S H] {07-06-2012} 1M CsCl THF DTE pulse

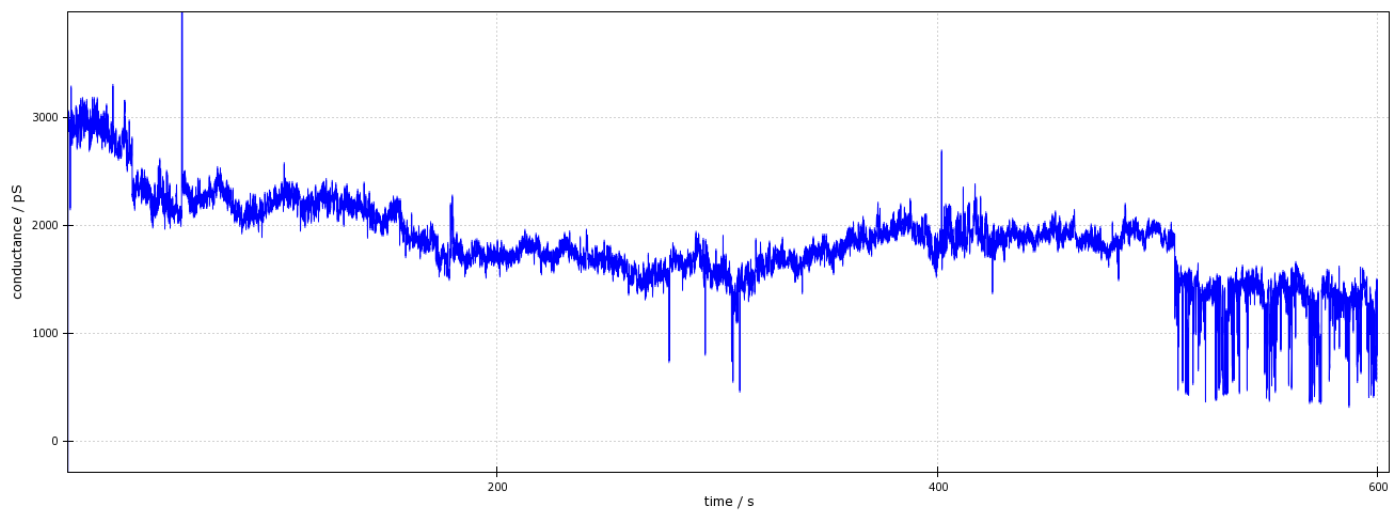


no grids; "baseline" irregular

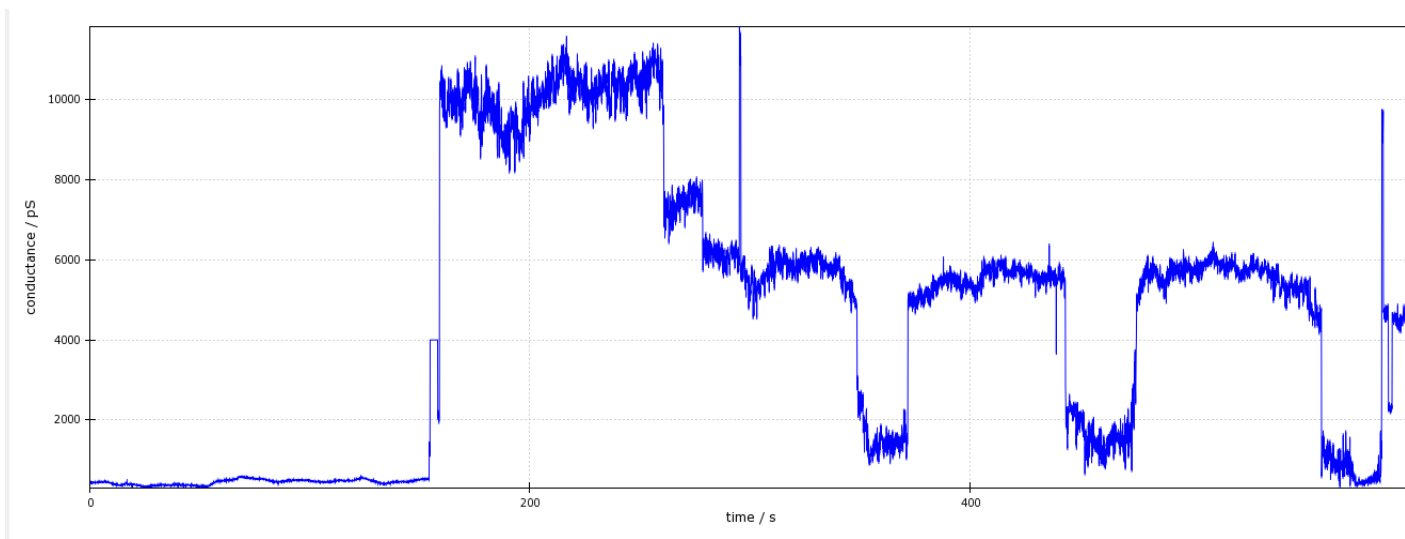
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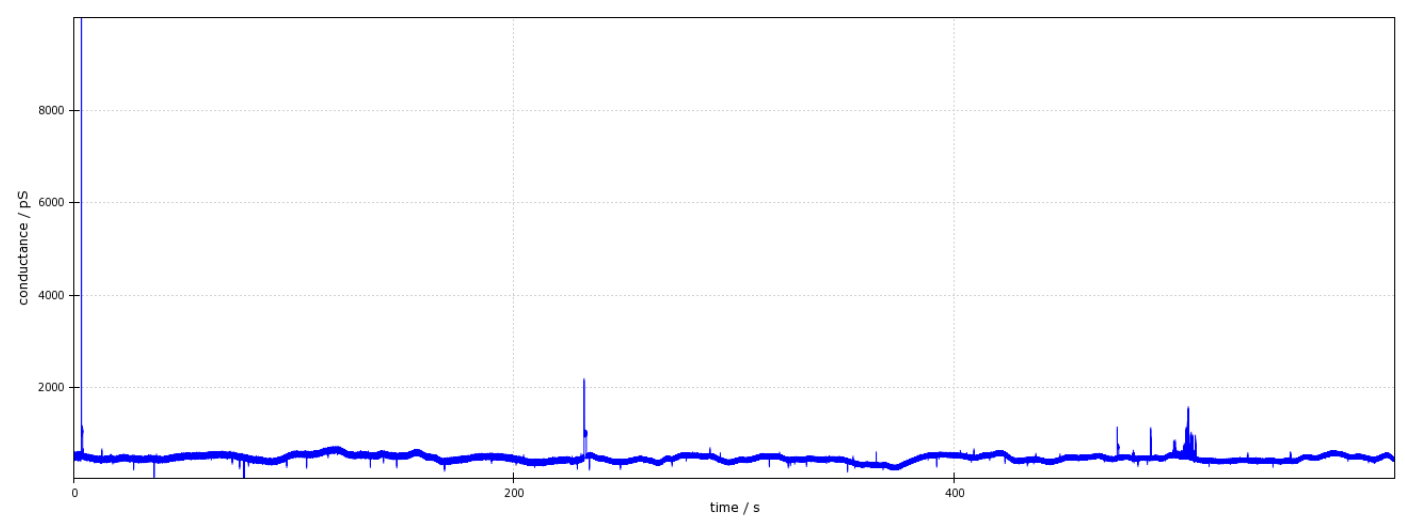
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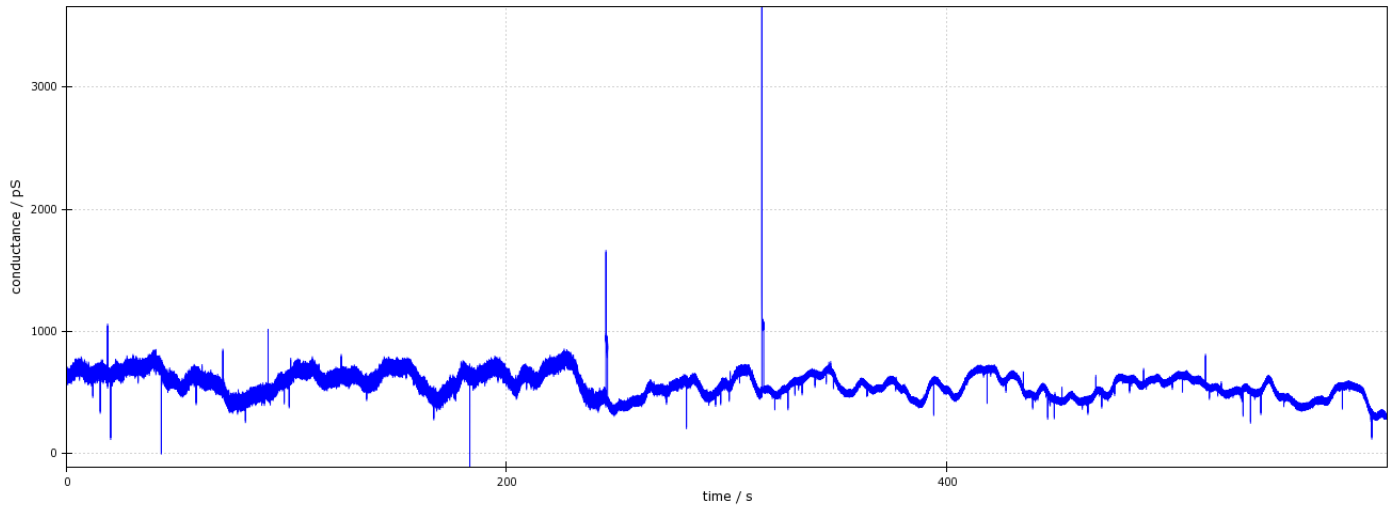
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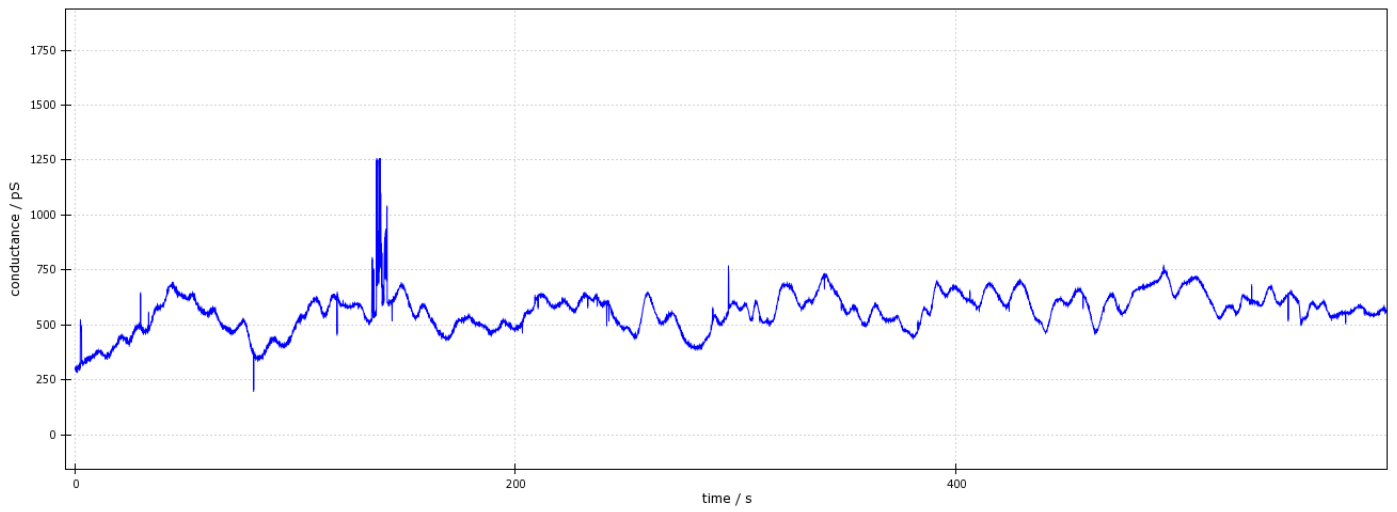
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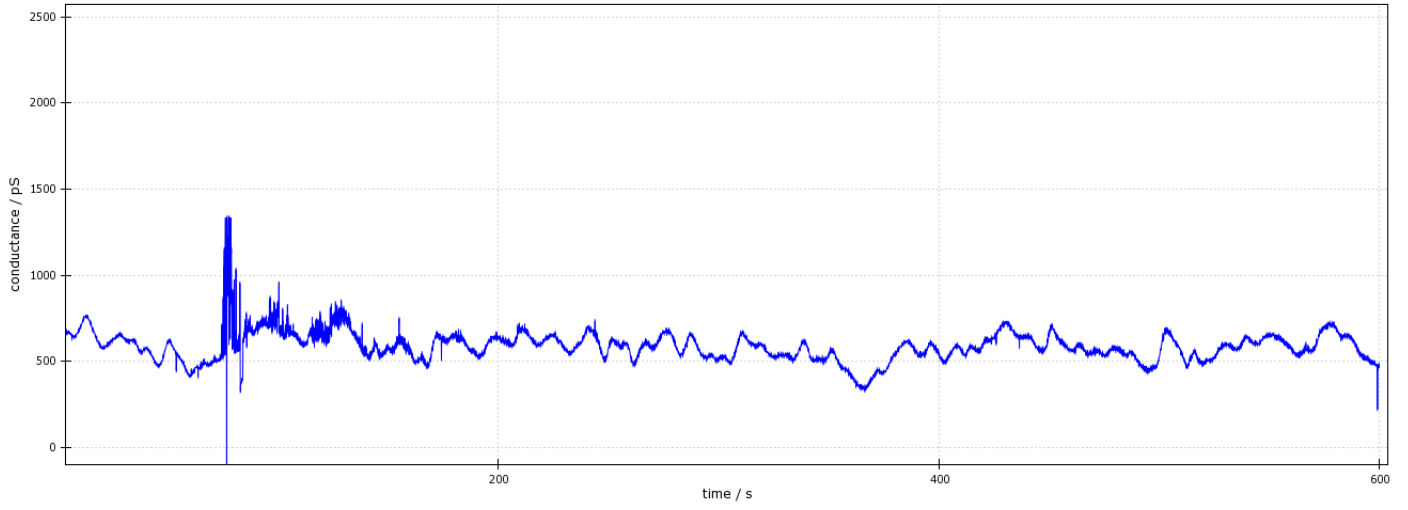
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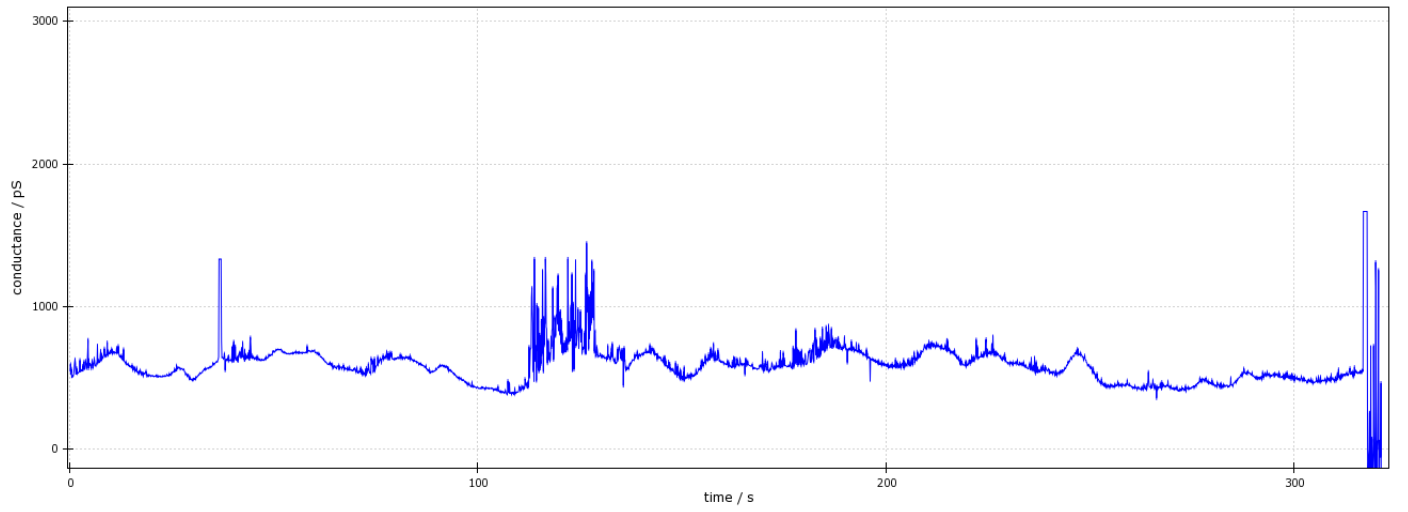
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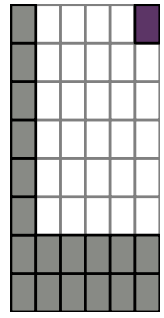
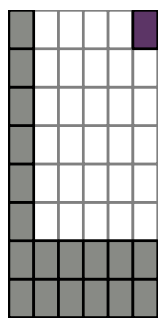
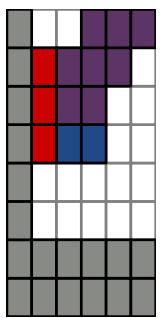
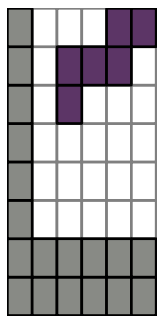
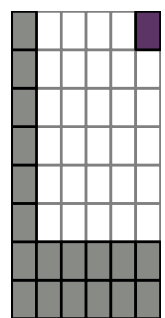
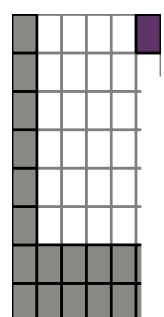
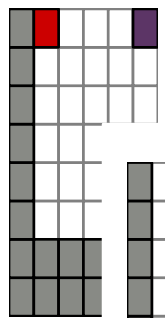
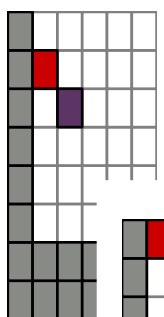
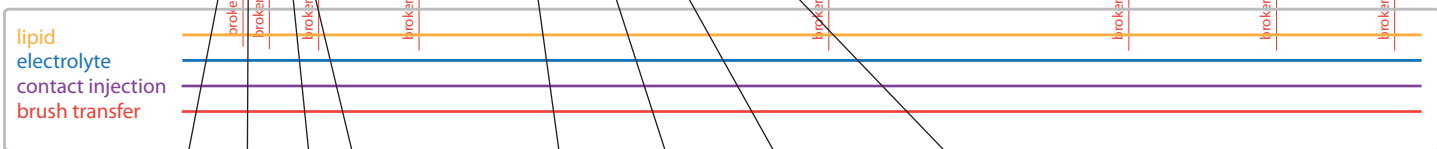
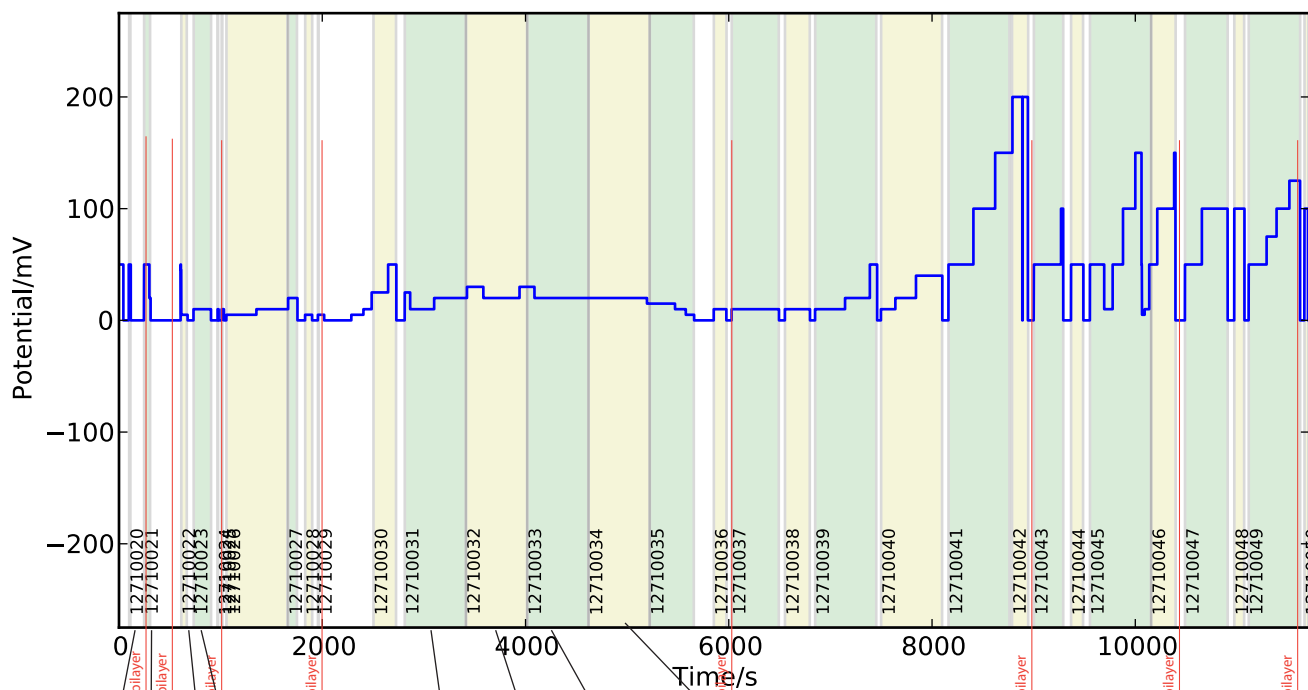
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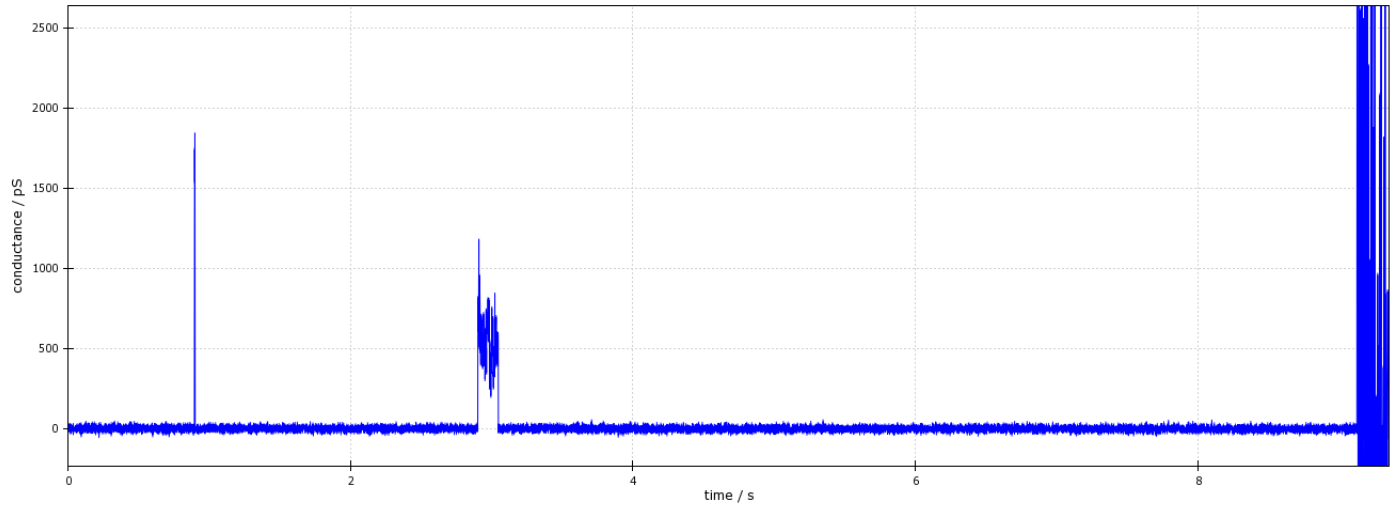
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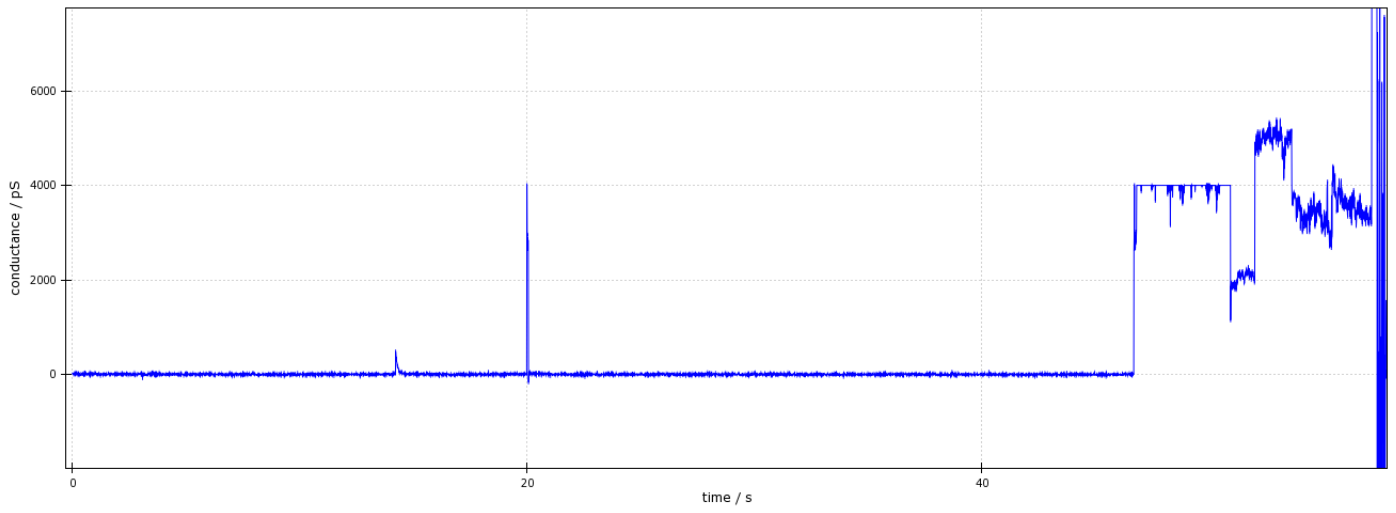
AKD-30 [6A8SH] {07-10-2012a} 1M CsCl MeOH_acetone (1)



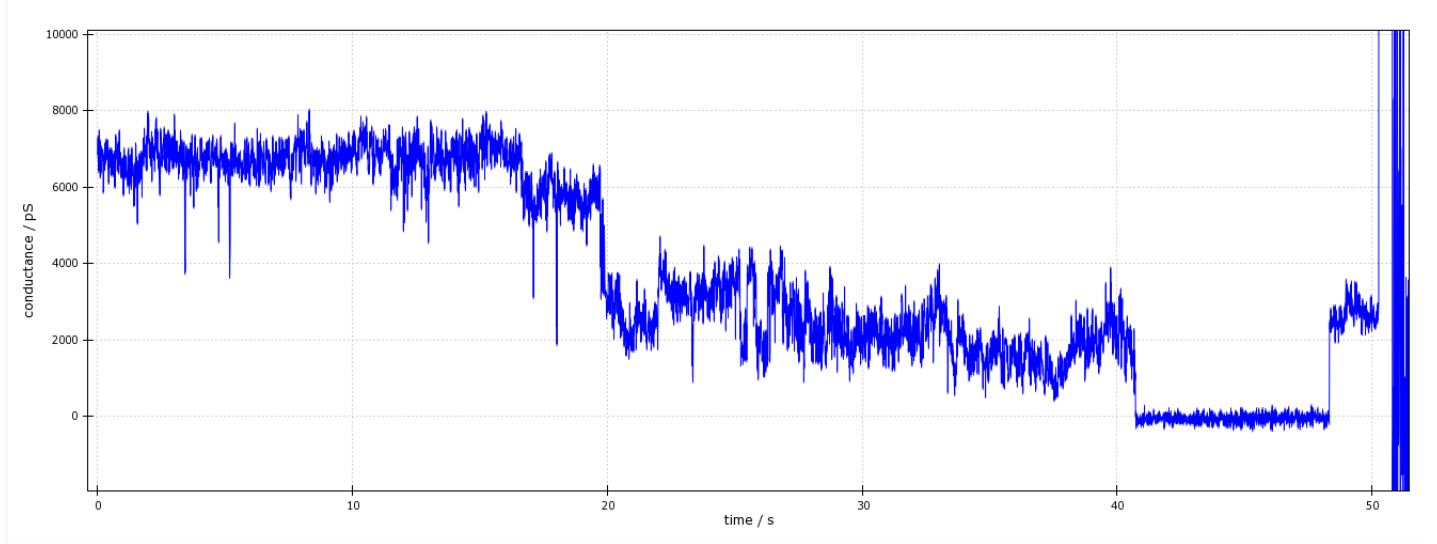
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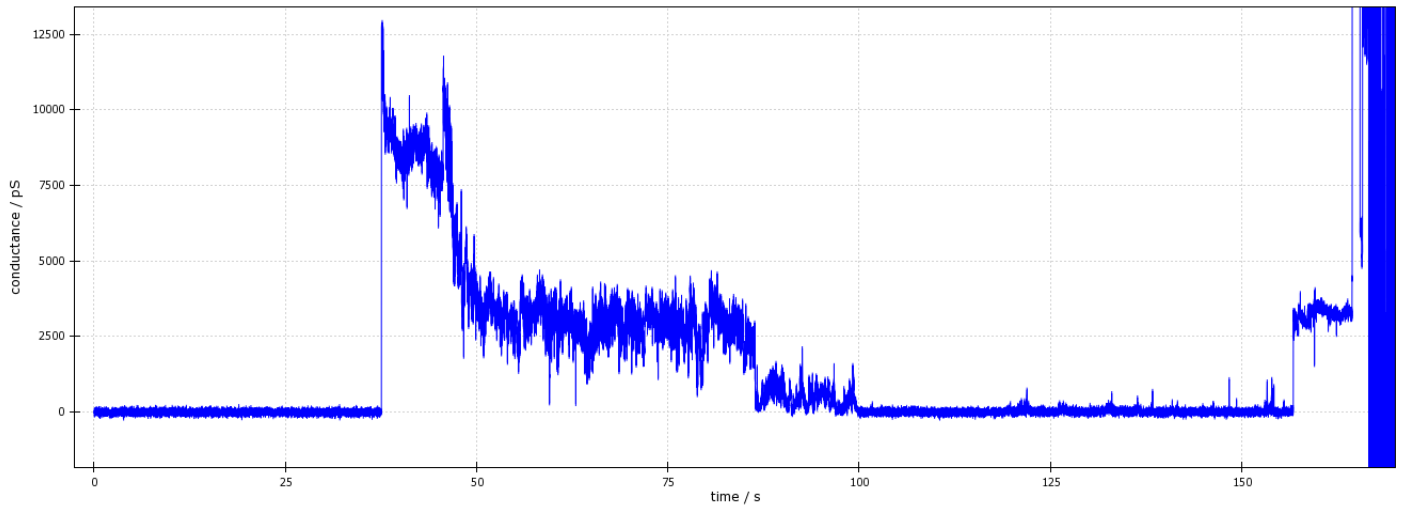
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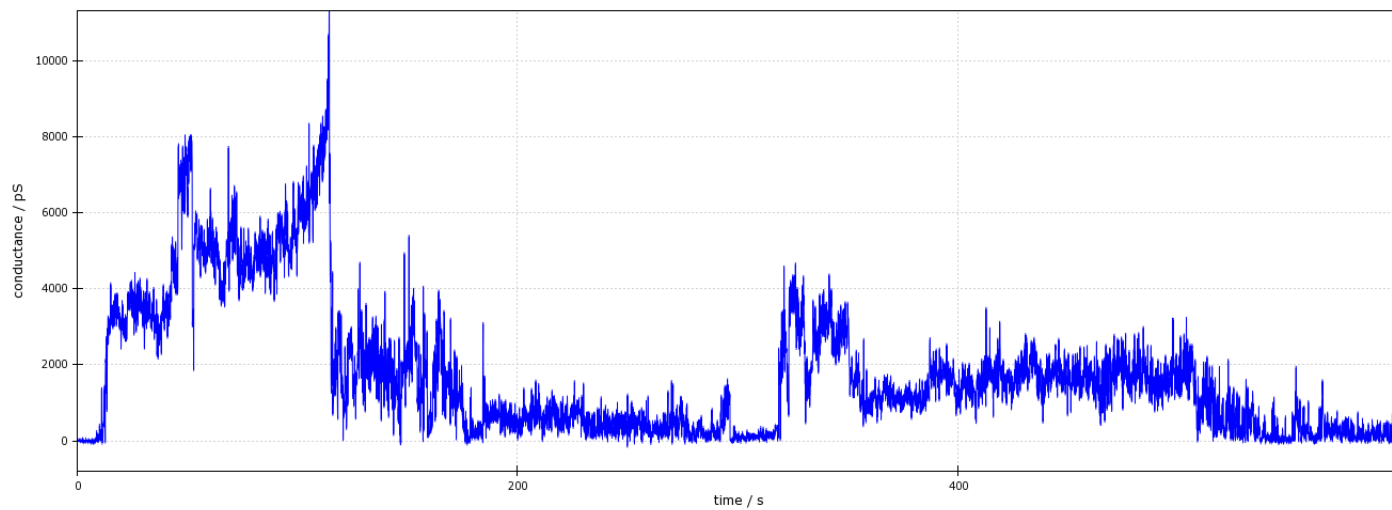
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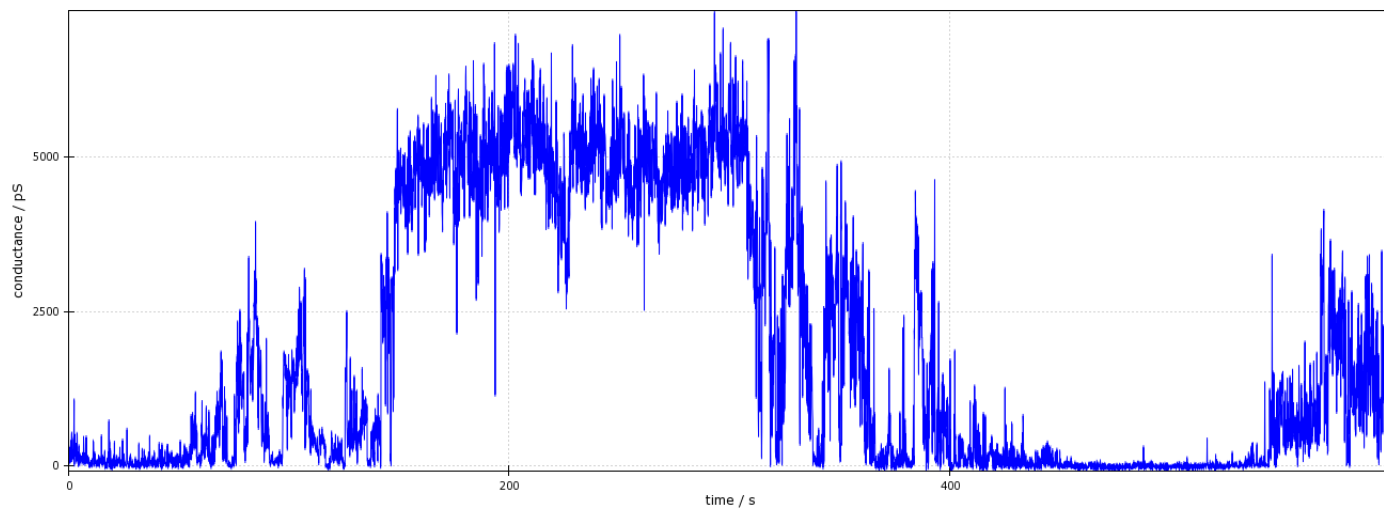
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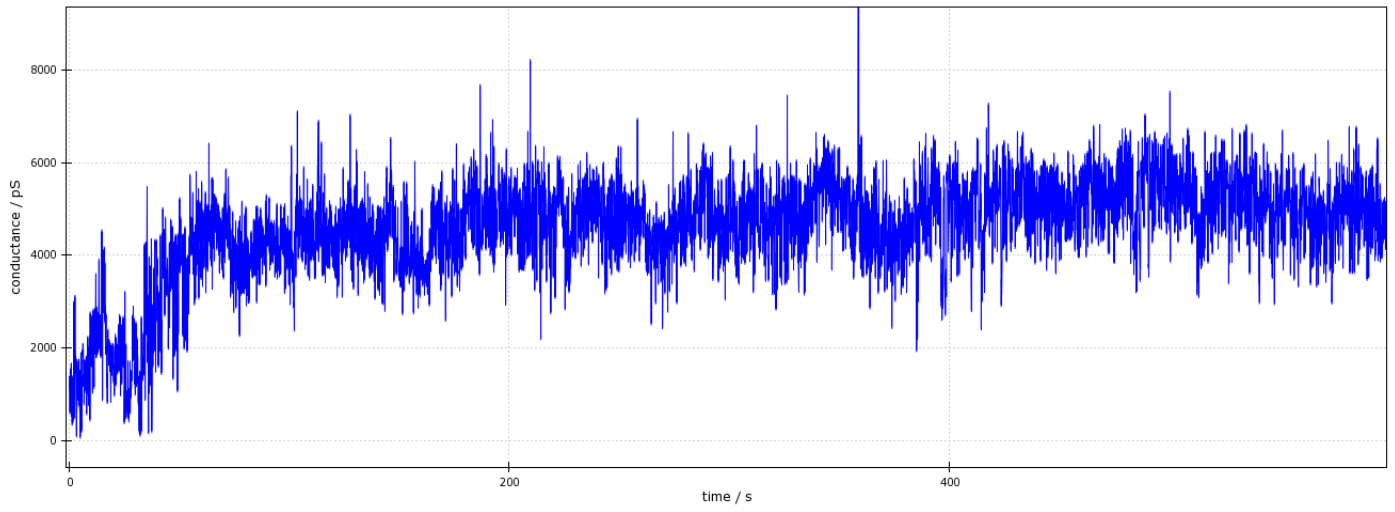
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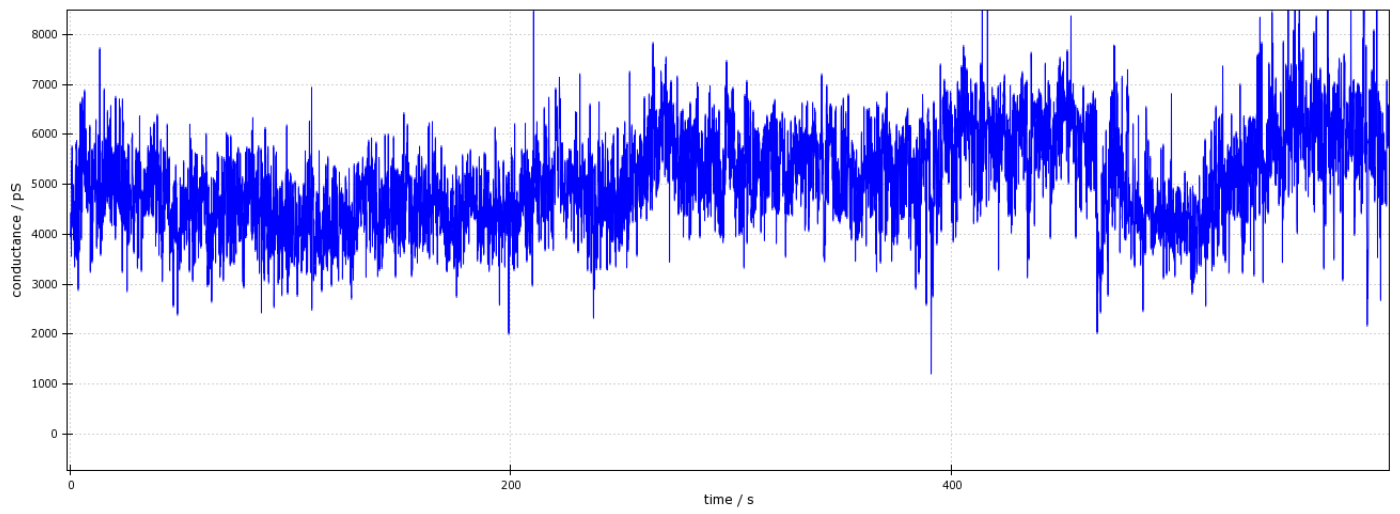
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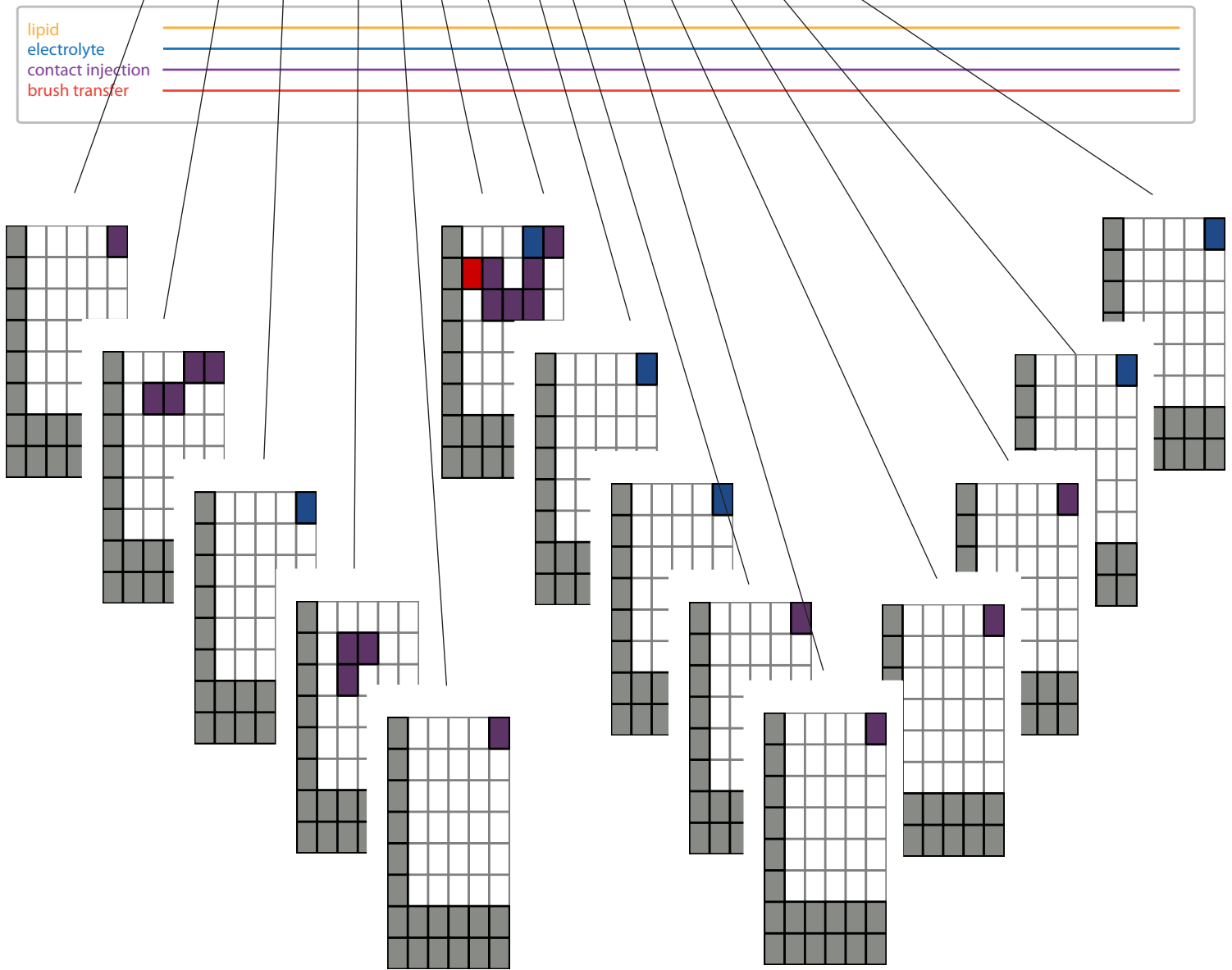
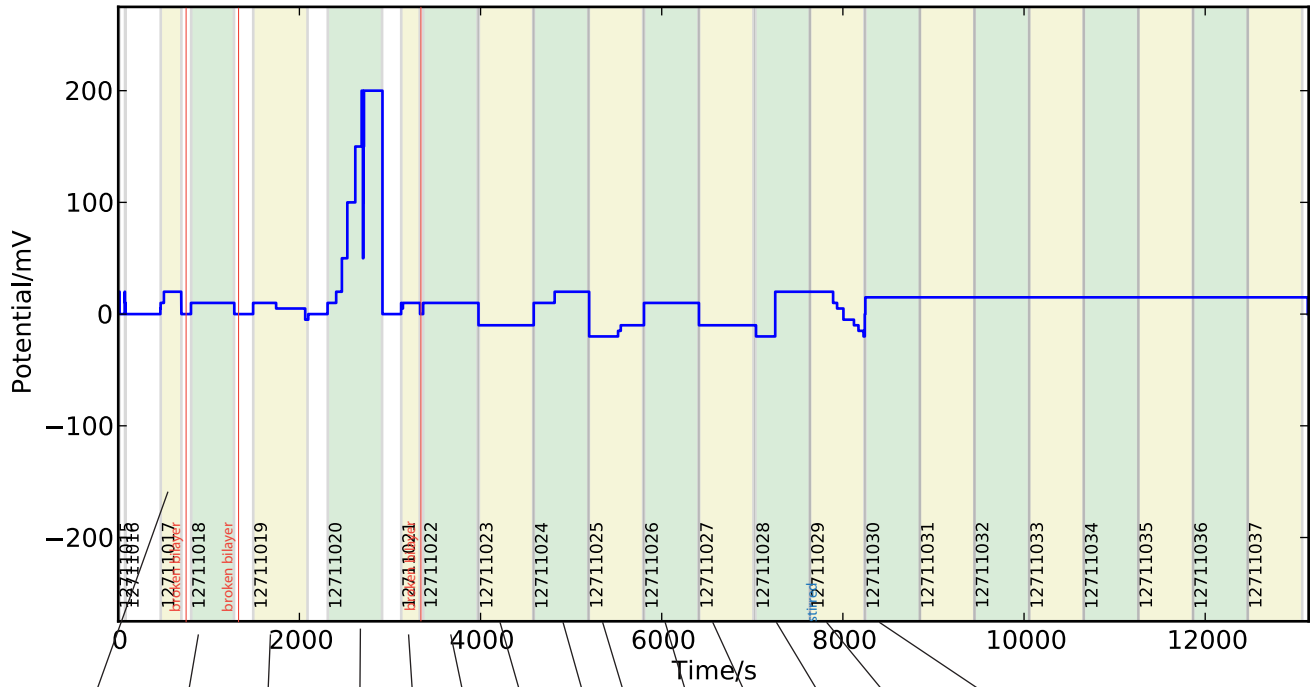
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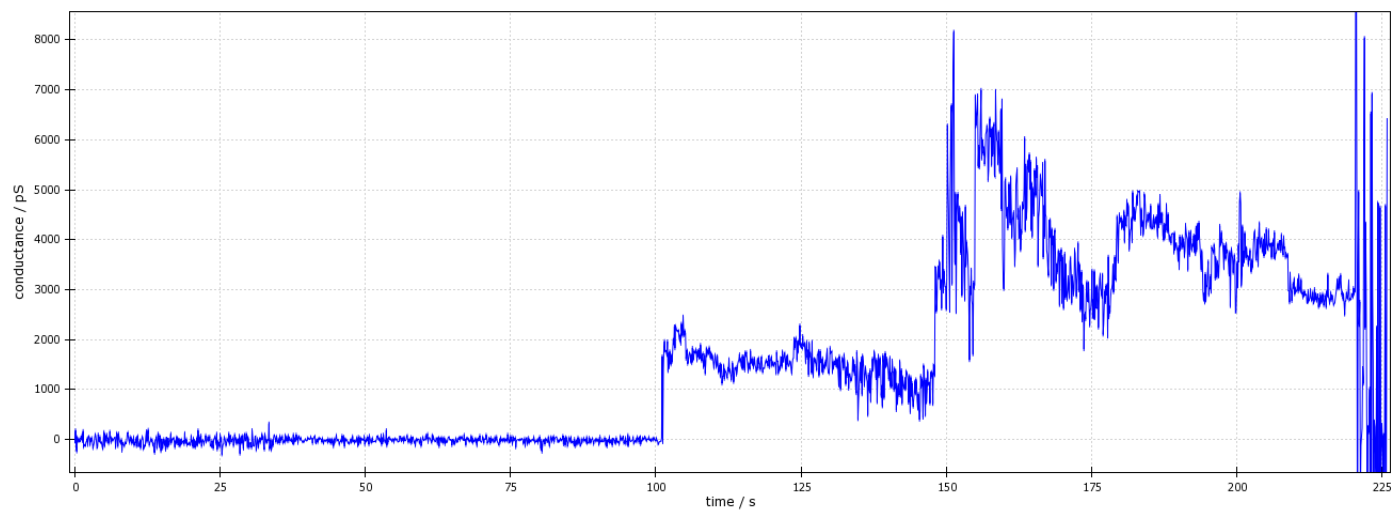
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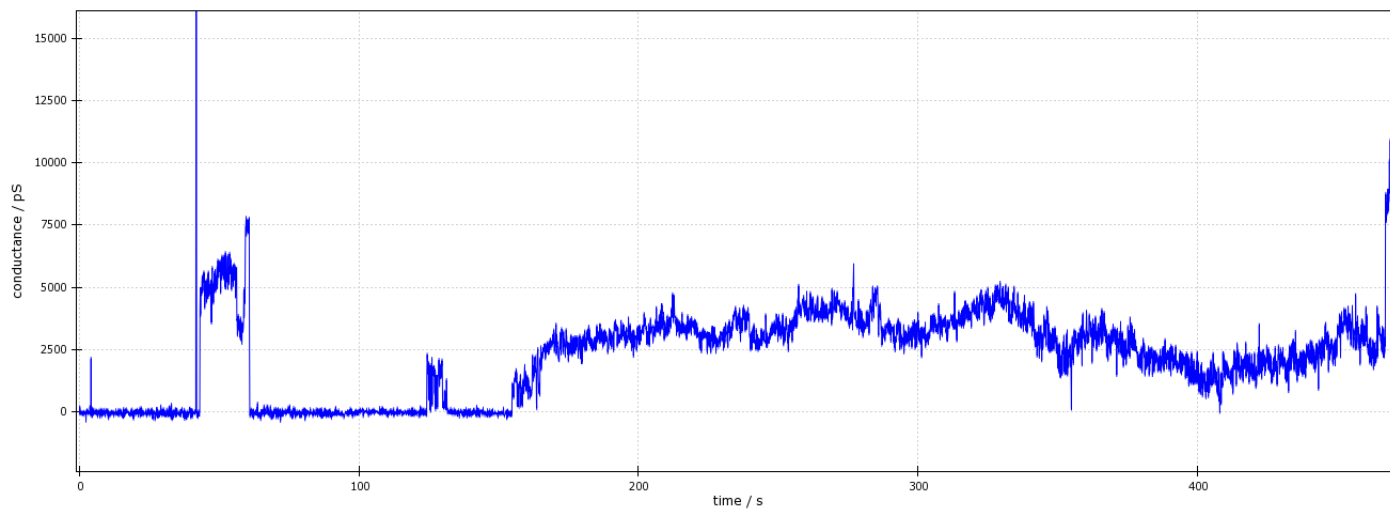
AKD-32 [6A8SH] {07-11-2012a} 1M CsCl acetone_MeOH



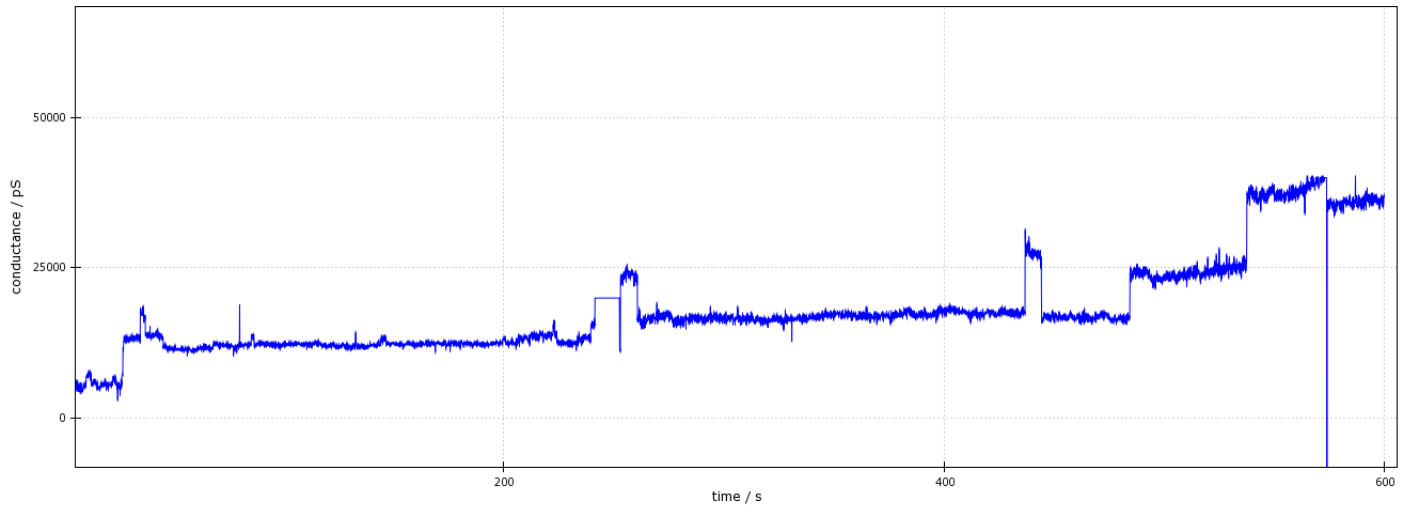
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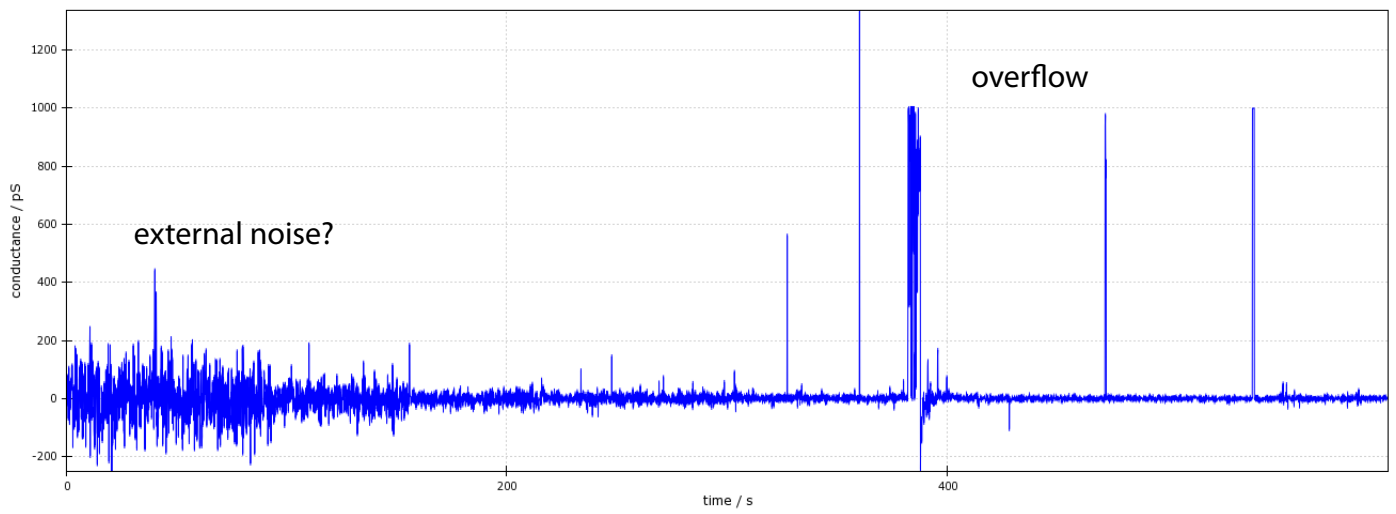
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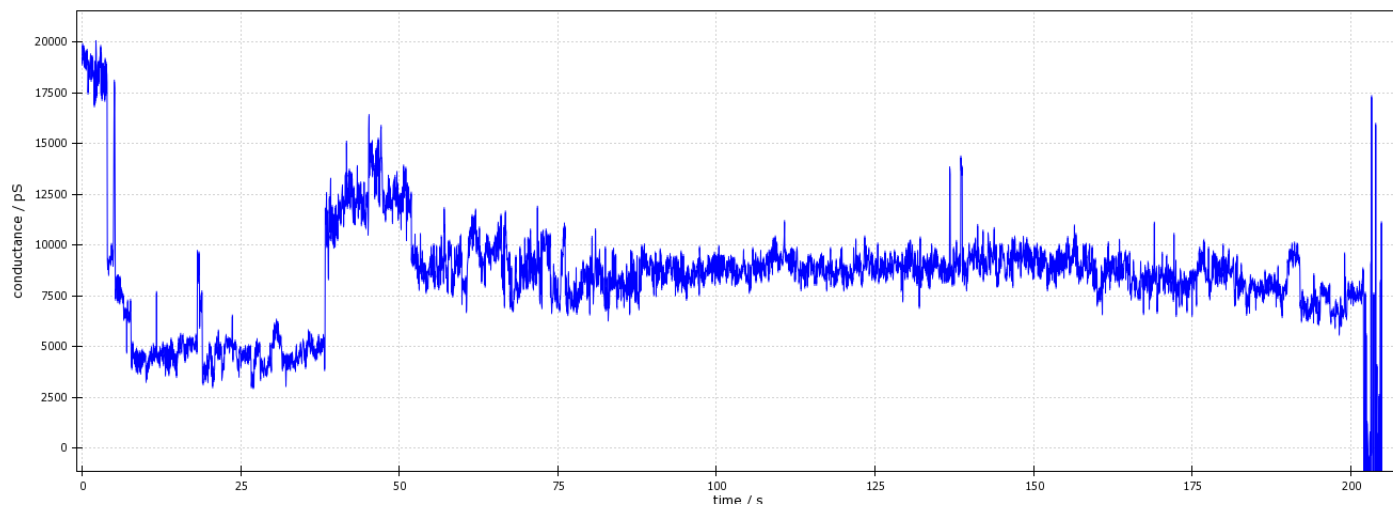
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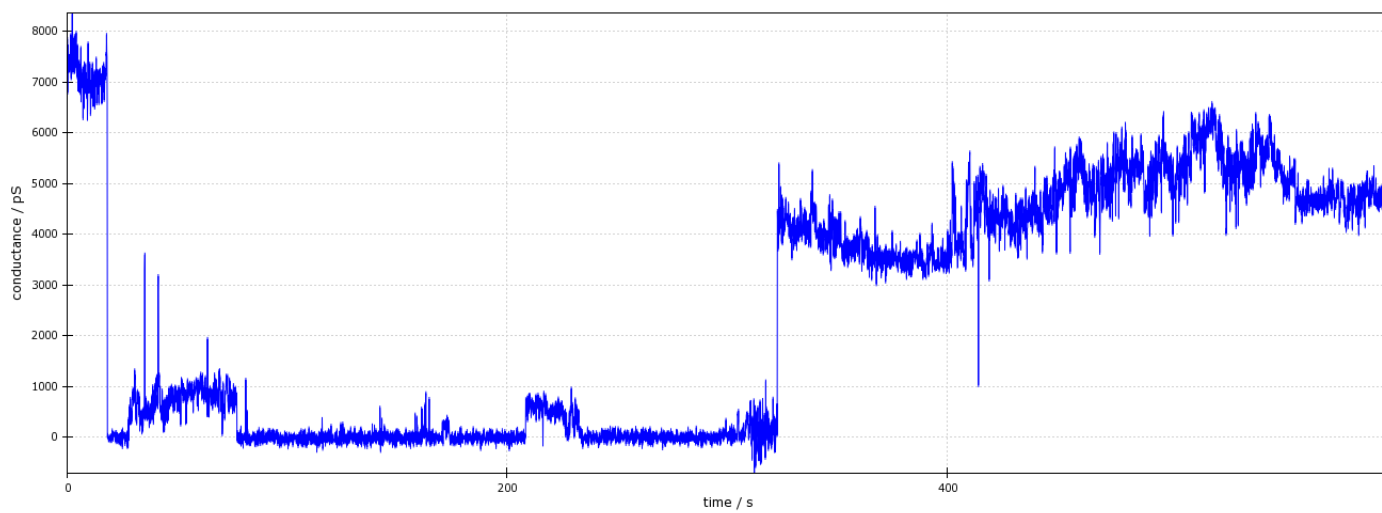
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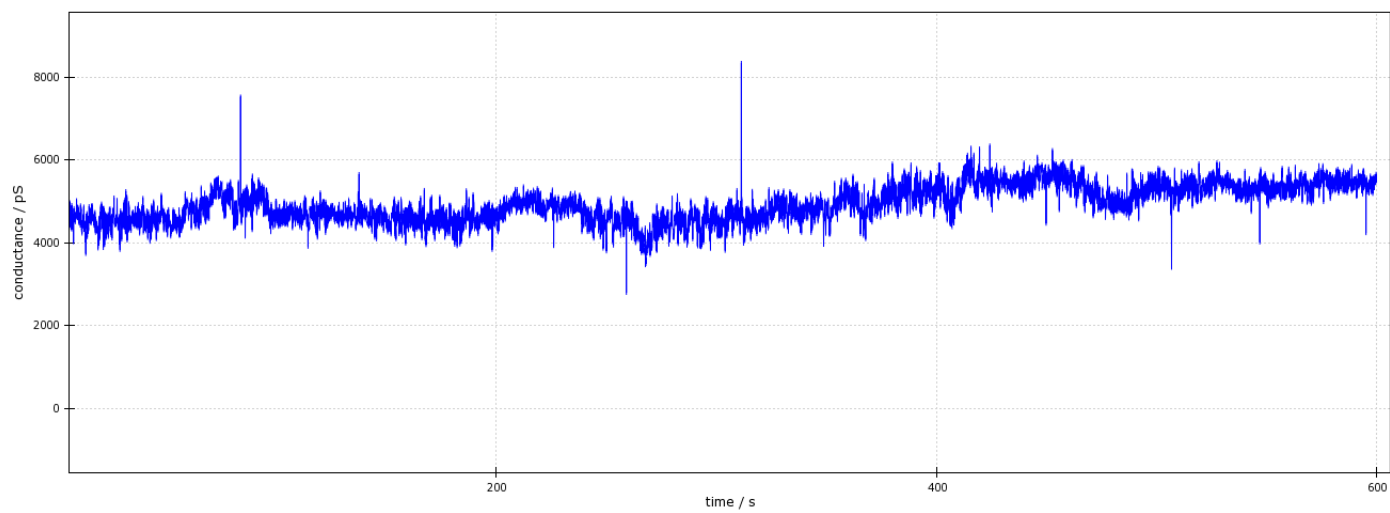
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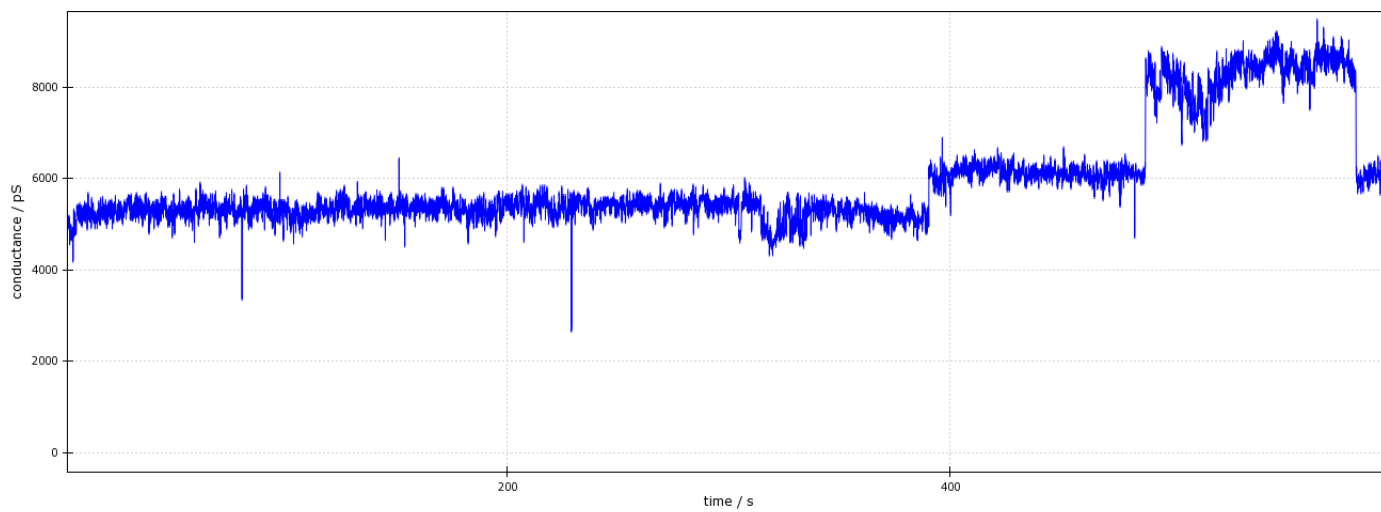
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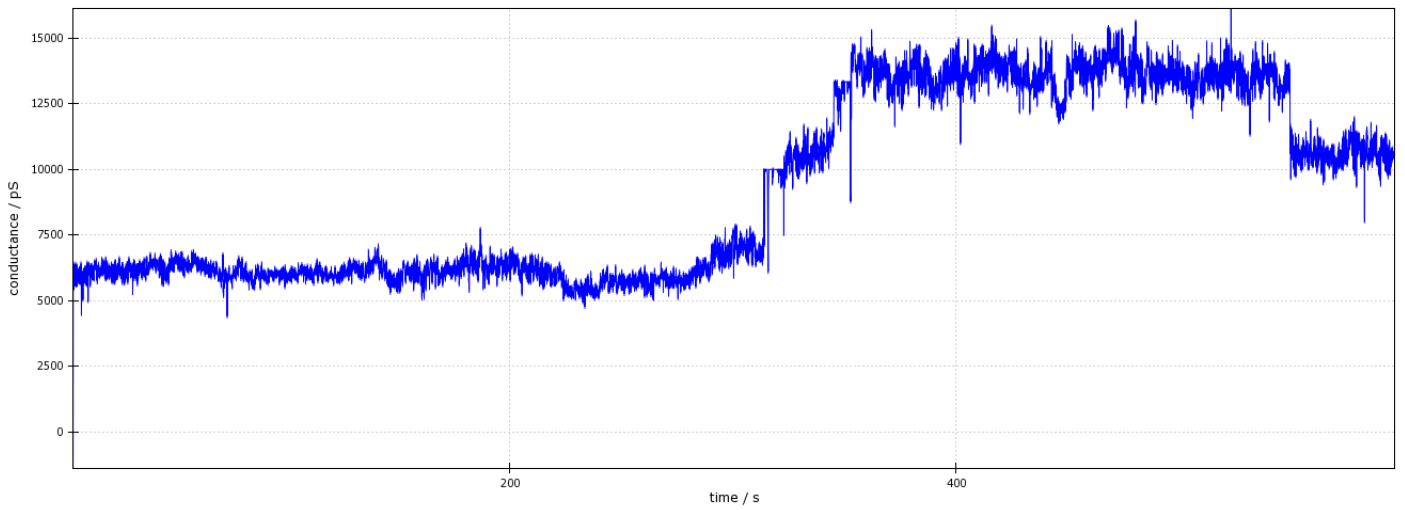
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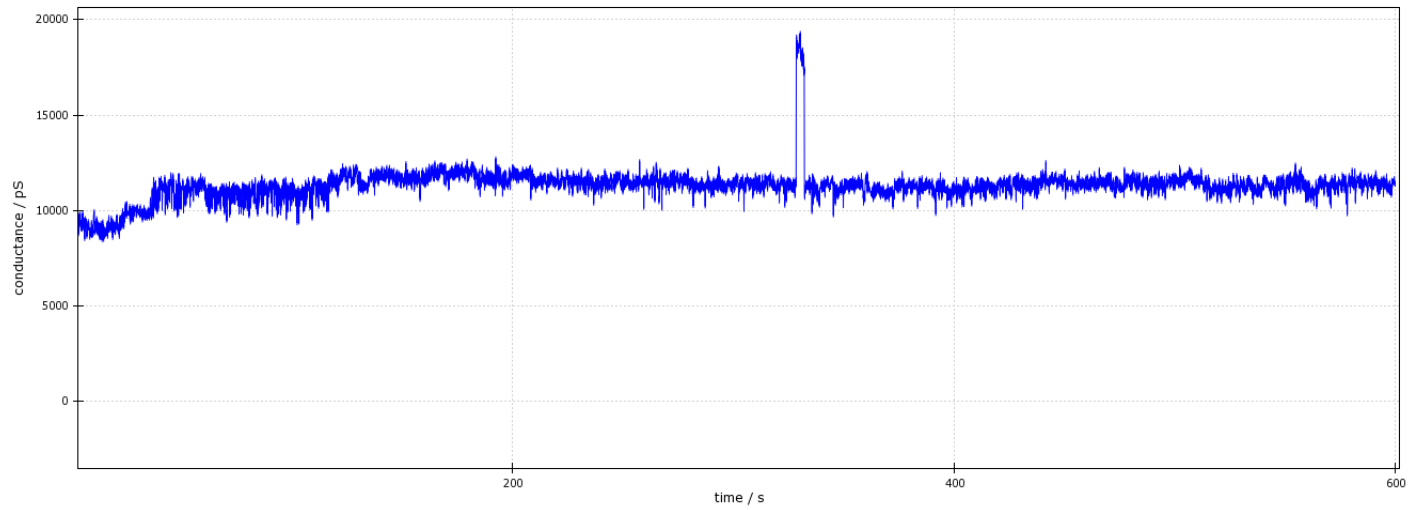
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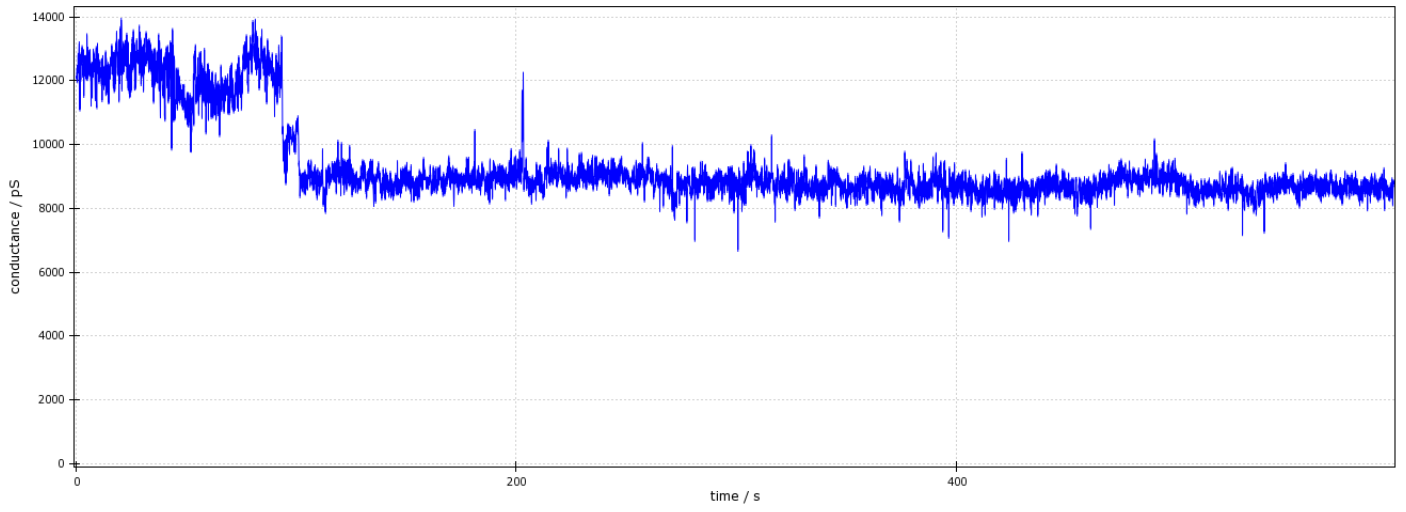
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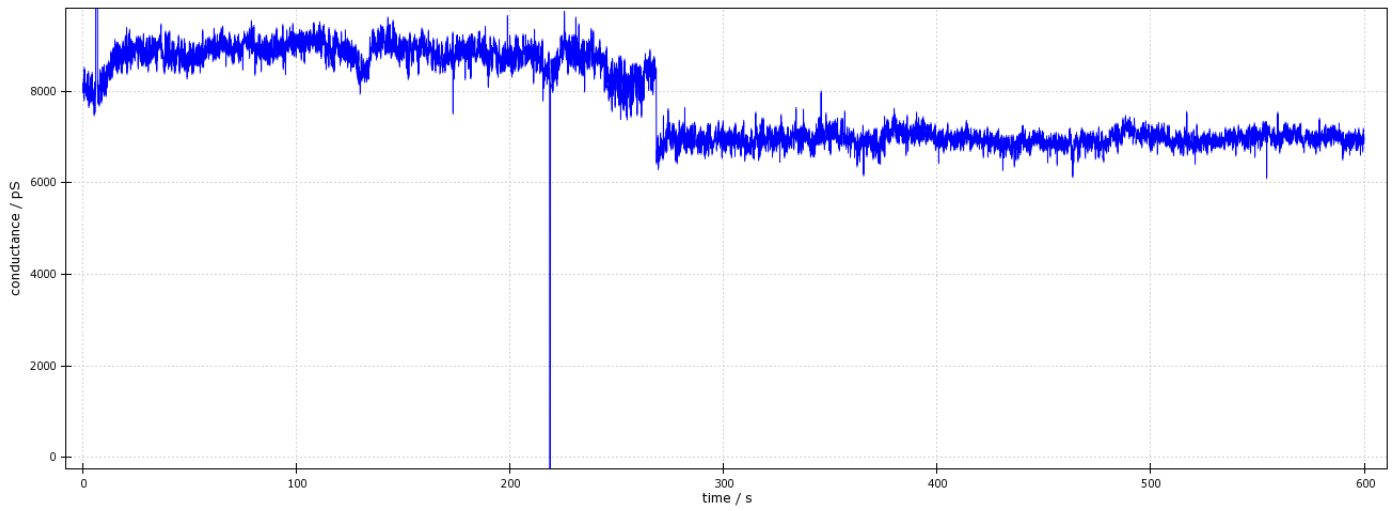
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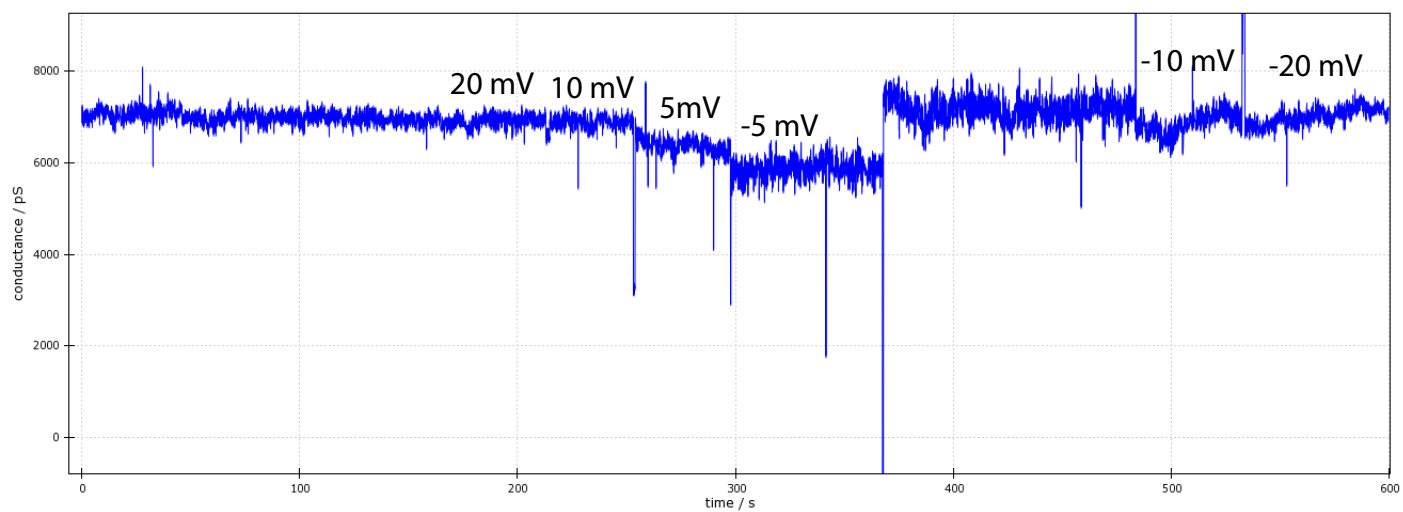
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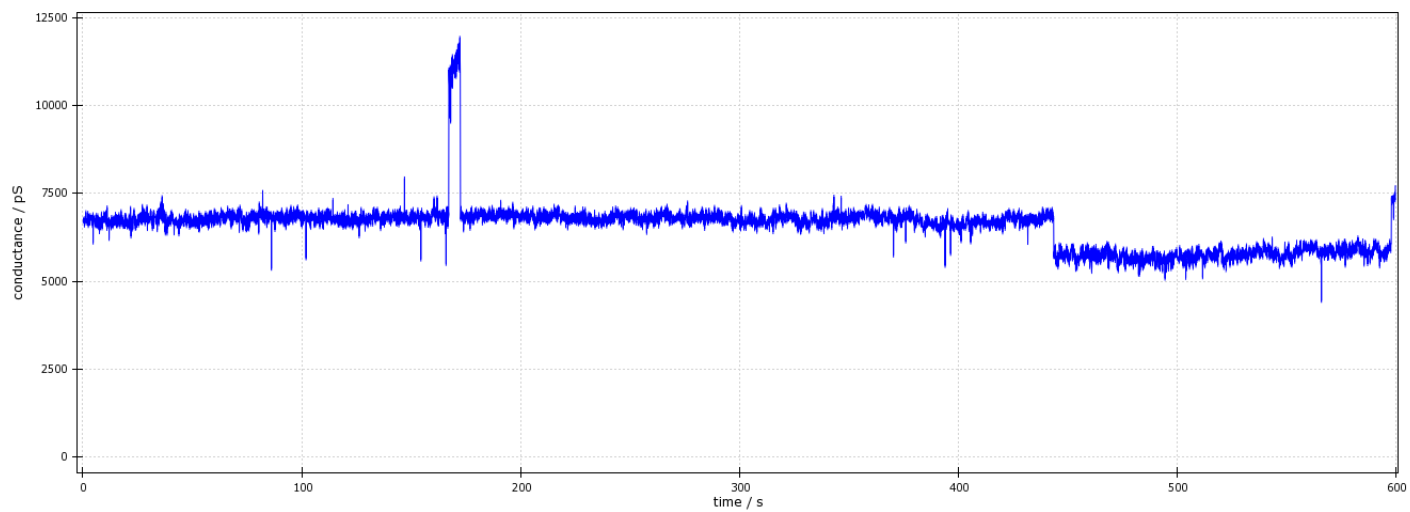
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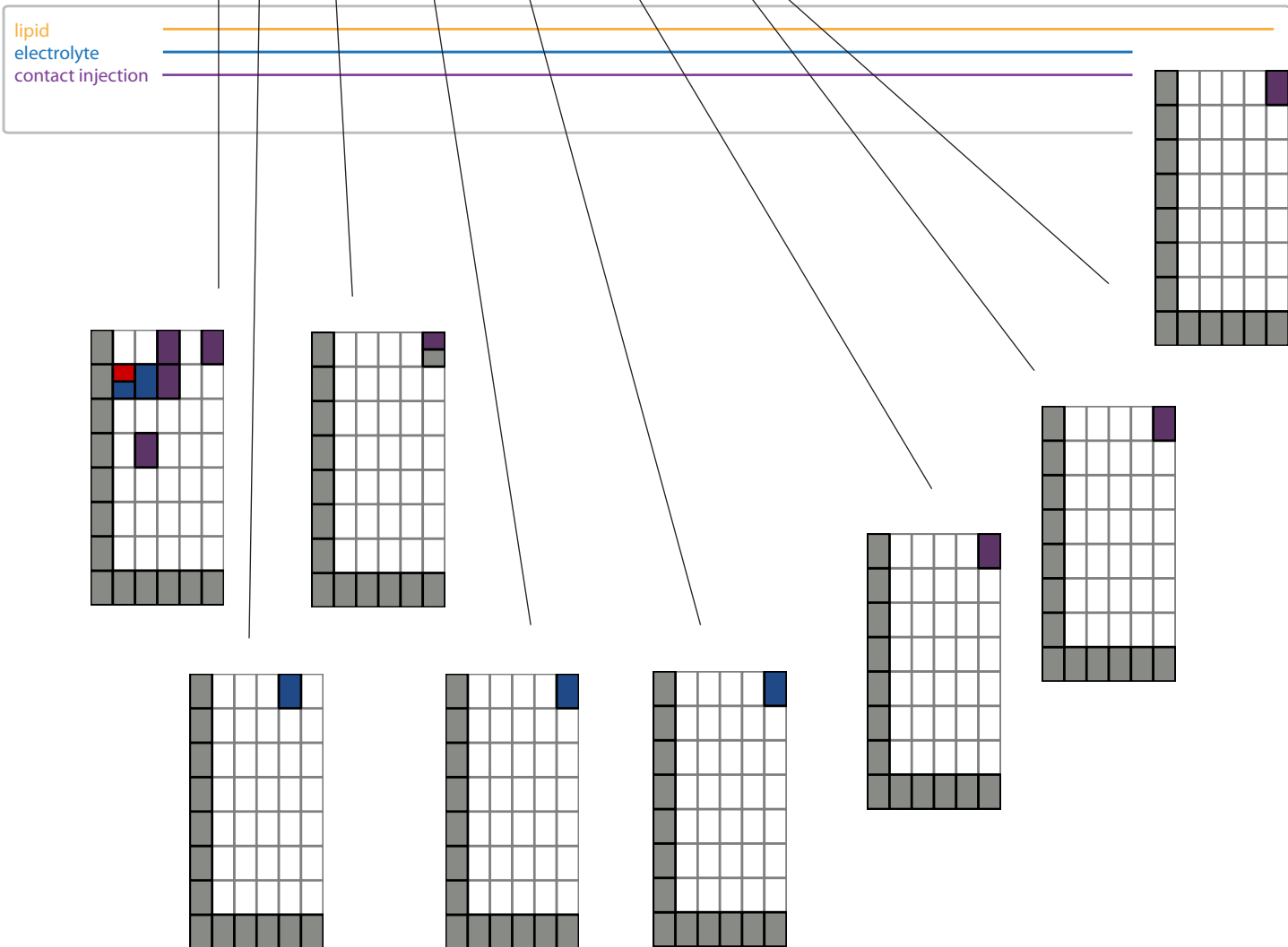
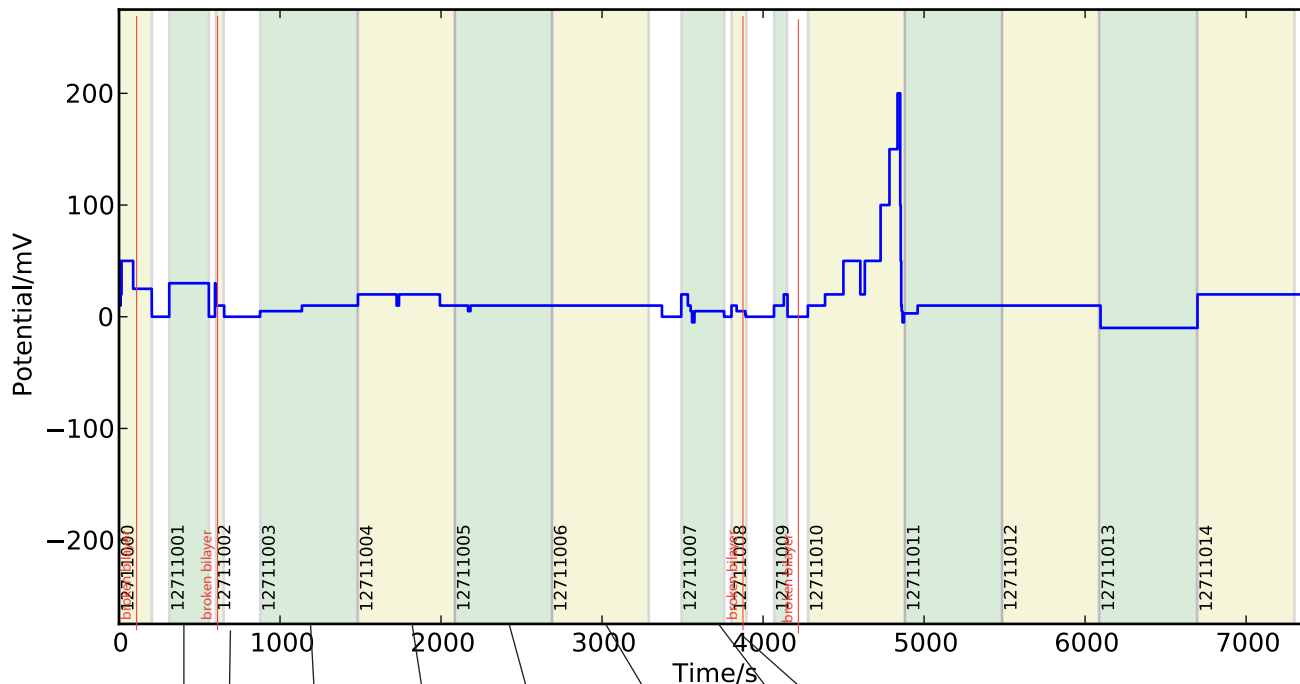
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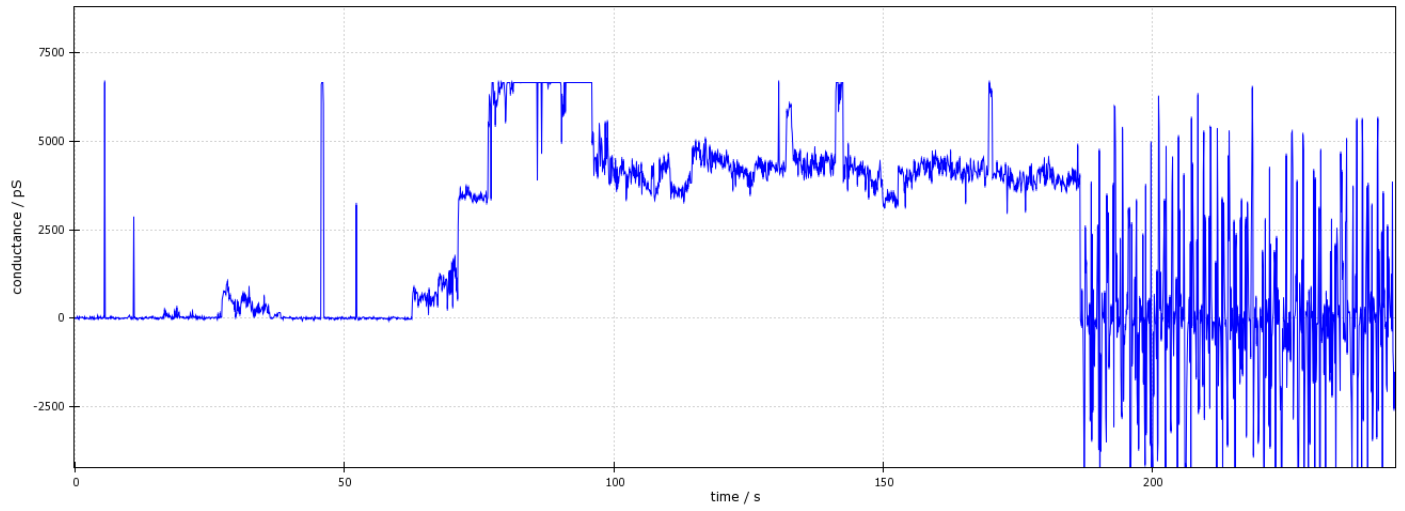
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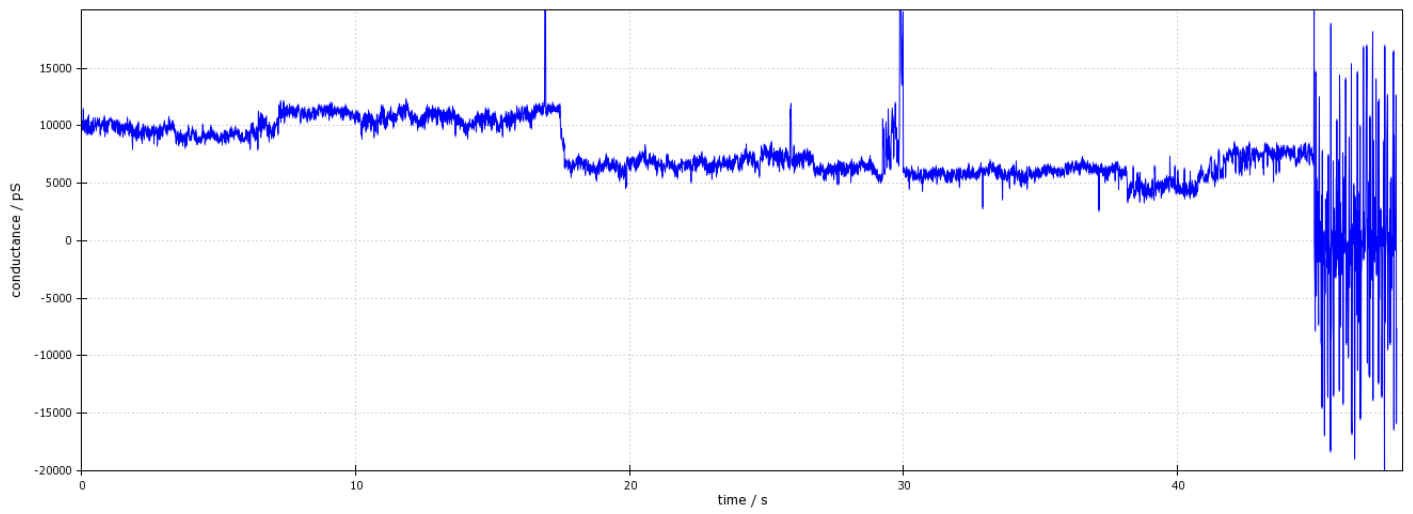
AKD-31 [6A8SH] {07-11-2012} 1M CsCl acetone_MeOH



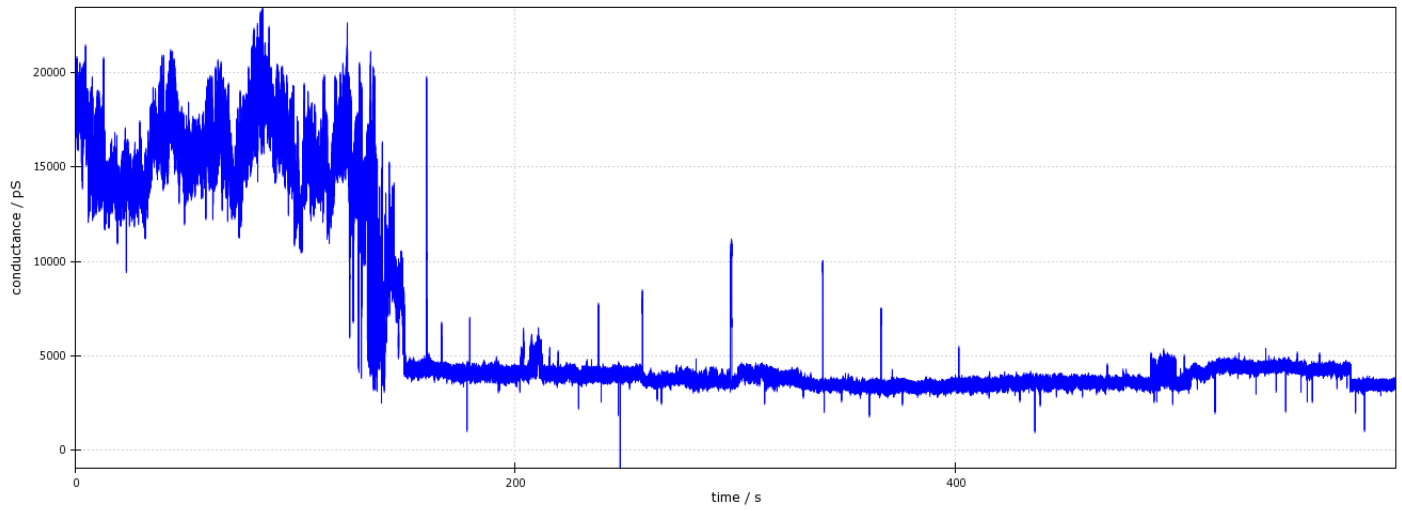
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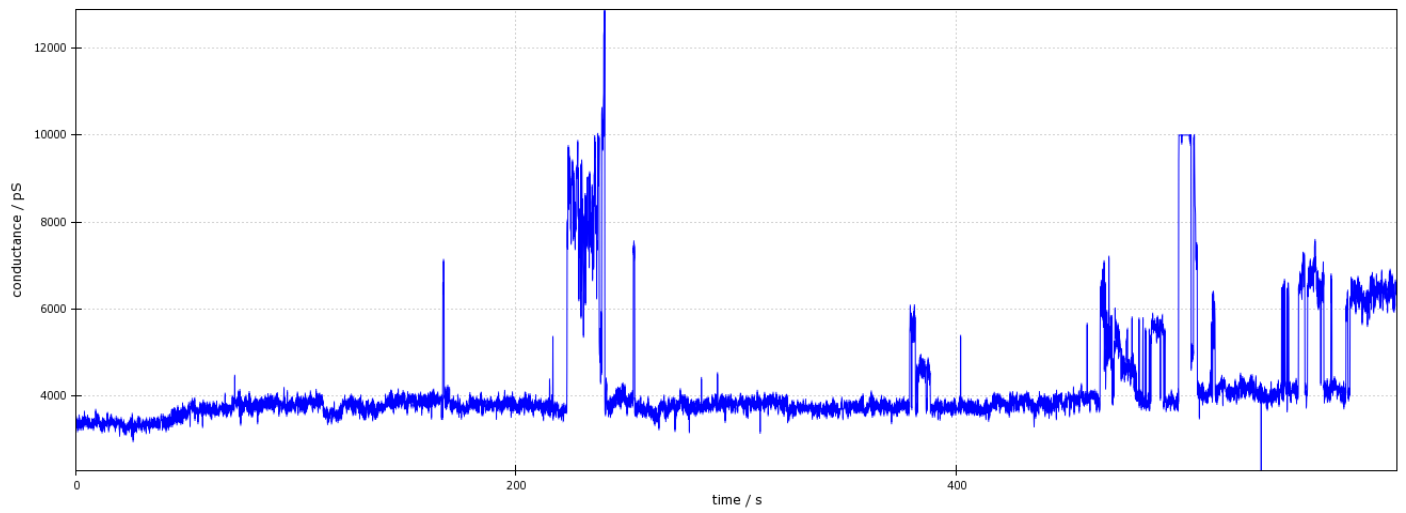
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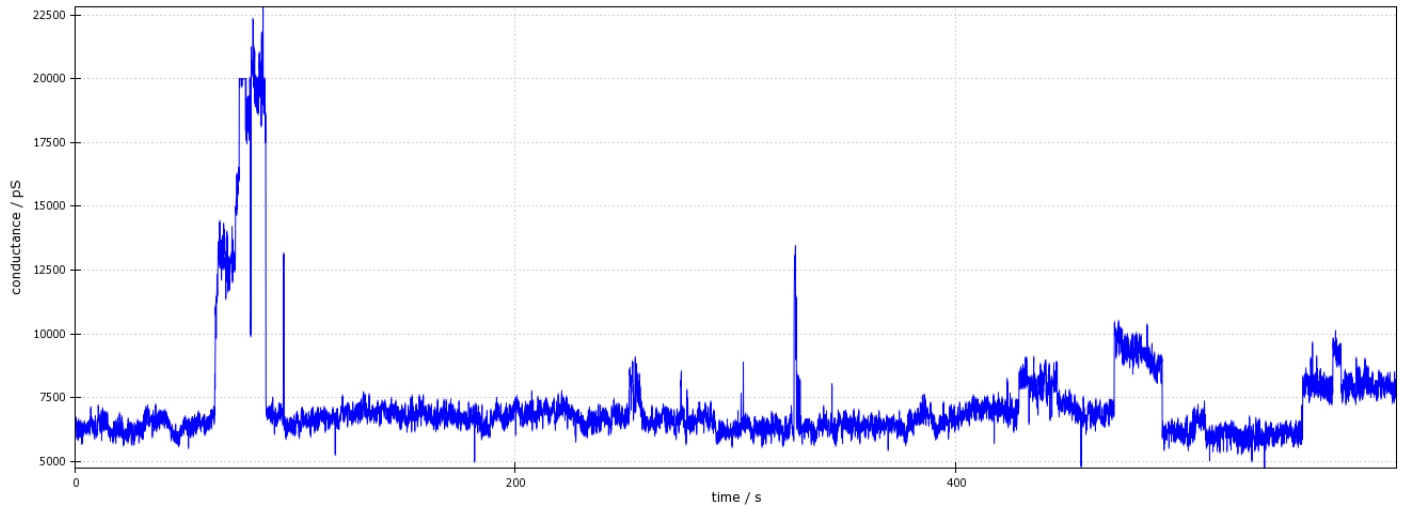
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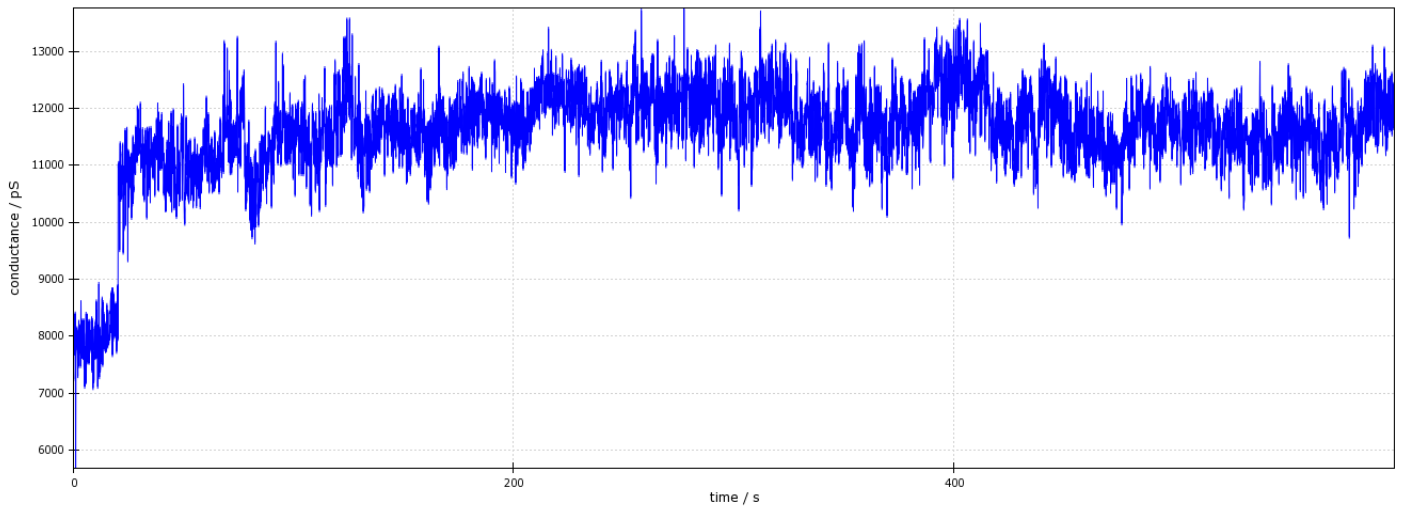
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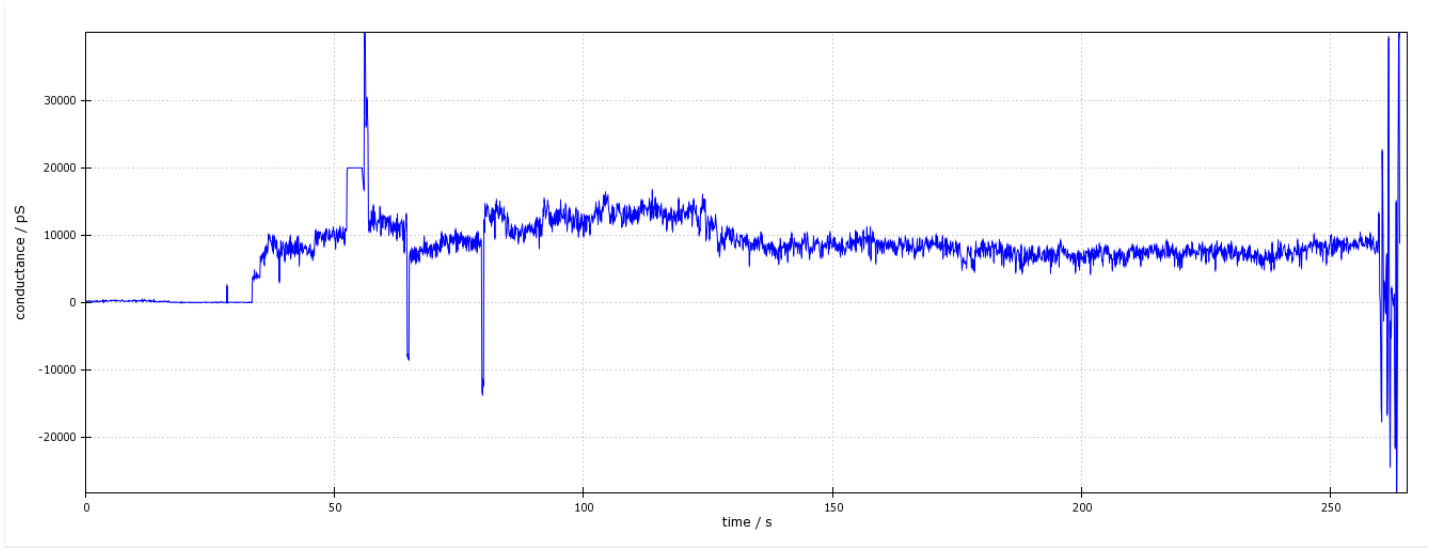
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006



007



008

