



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

“Green” Internet Panel

Internet Governance & Environmental Sustainability

15 September 2022

ACM SIGCAS Showcase

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About Me:

B.S. CS @ ETF.ac.yu

1991-1998

VAX-VMS, DecNET, ZaMir...

ASCII, TechInc, LAG;

HIP97, HAL2001,

WTH2005, HAR2009,

OHM2013, SHA2017,

MCH2022; TBD@ADM;

CCC 1999-2018



Alisa, Charlie, Olivia



RIPE NCC:



1999-2022+

IPv4, IPv6 / RIPEness,
DNSSEC, RPSL, RIS,
RIPE Atlas, hackathons

RIPE:

SEE{1-10}, CoC-TF,
NOGs, IXPs, RIRs,
“Trusted Contact”

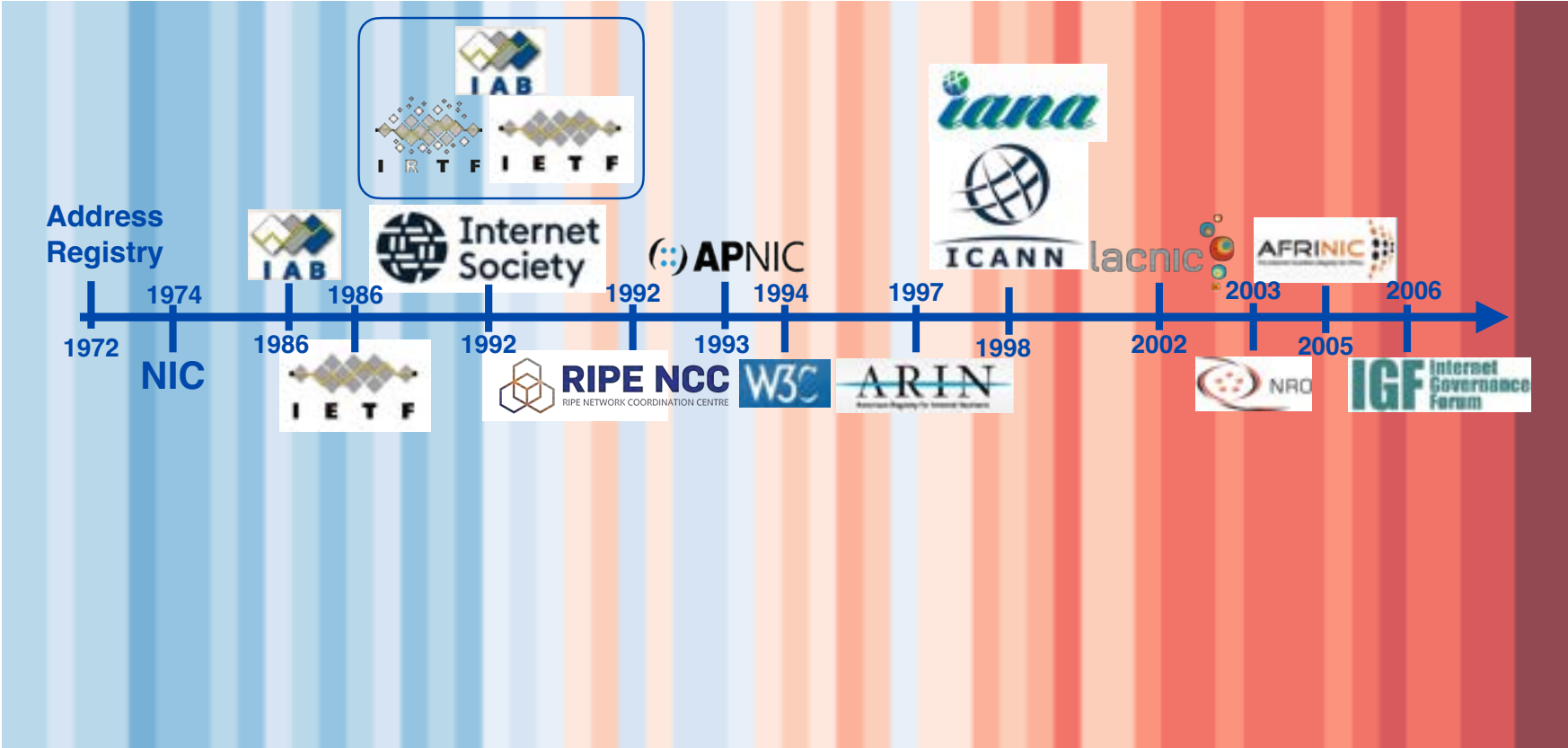
C-PTSD, RSI, OCD

ADHD, LGBTQ*

NVC, EMDR, SNRI, yoga

EFT, CBD, MBSR, ASMR

Internet Governance & Global Warming Timeline



Today's Tragic Context



- **2020(2) = Third Year of Global COVID-19 Pandemic** (+2 new ones)
- **Wars in Ukraine, Armenia, Syria, Yemen...**
- **Climate Chaos...**
 - Summer heat-waves: draughts, forest fires, dry rivers, lack of drinking water...
 - Floods in Pakistan, Texas, Middle-East, Africa, Australia...
 - Glaciers melting in Alps, Andes, Himalayas, Greenland...
 - Upcoming "hunger winter" with inadequate heating infrastructure...
- **Still, I am grateful for being alive, safe, healthy-ish**

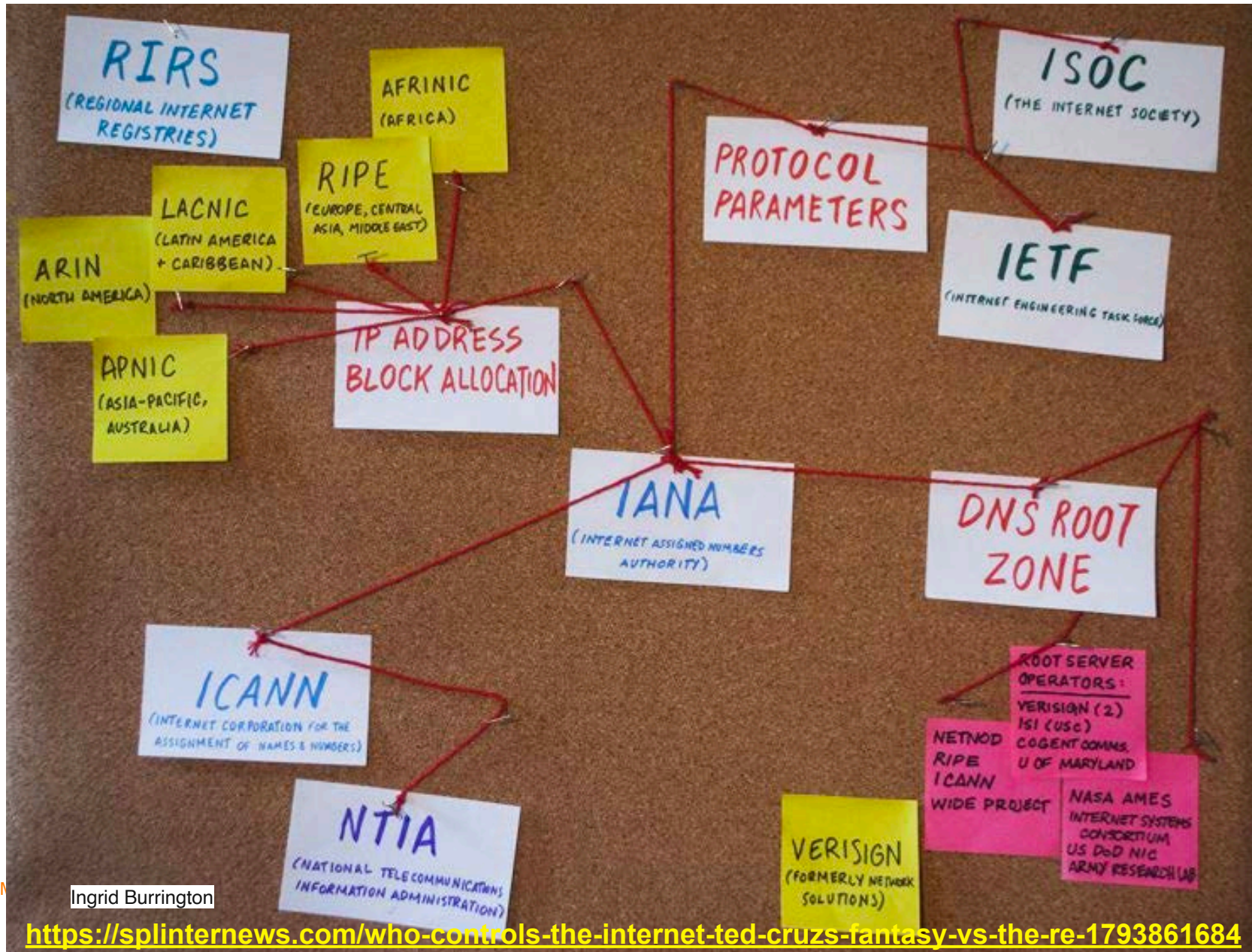
Topics



- **Internet Governance & Regional Registries & RIPE Community**
- **Problem: Not such a “Green” Internet**
 - impact of the Internet on Nature
 - impact of Nature to the Internet
- **Attention to environmental sustainability within technical communities & calls to action**



Technical Internet Governance & RIPE Community



Regional Internet Registries & Their Communities



RIPE (community) and the RIPE NCC



Take part in RIPE / NCC Communities



- **Join RIPE meetings**

- Twice a year, hybrid; ~1000 participants; network operators et.al
- Academic cooperation funding & Fellowship available

- **Join smaller events organised by RIPE NCC**

- Regional meetings / Training courses & on-line education / Hackathons

- **Write for RIPE Labs: <https://labs.ripe.net>**

<https://ripe85.ripe.net/>

Join us at

RIPE 85
Belgrade, Serbia
24 - 28 October 2022

<https://labs.ripe.net/author/becha/building-bridges-between-diverse-communities-at-ripe-85/>

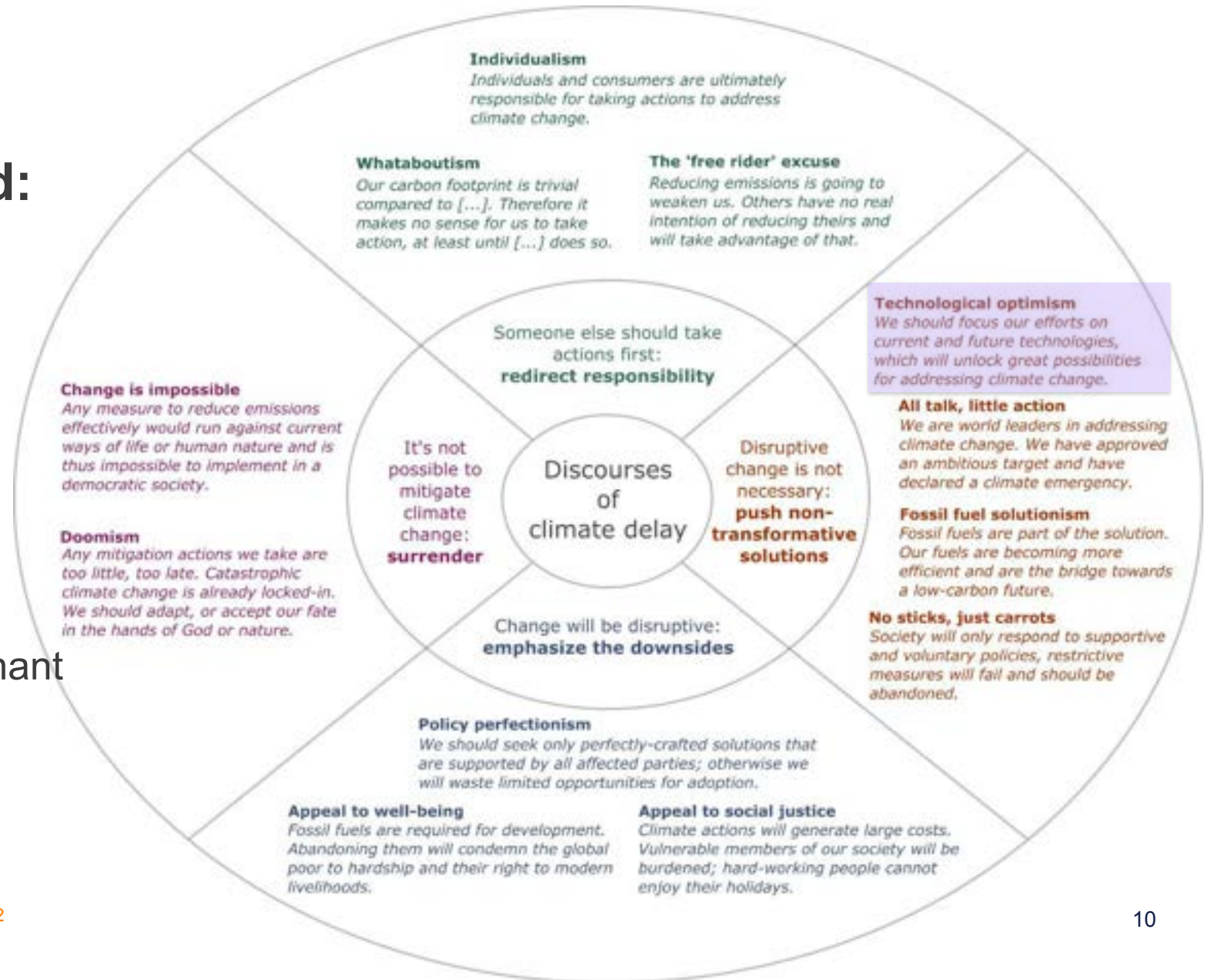


Not so “Green” Internet

Why?

- ... all this, and:

- “tech is neutral”
- focus on growth
- “we are the good guys” bias
- efficiency myth (Jevons paradox)
- aligned with dominant power structures



“Data is the New Oil” & Digital Colonialism



A NATURAL PAIRING: A data center in Ashburn, Va., seen past a Dominion Virginia Power substation serving it. Worldwide, such centers use the rough equivalent of the output of 30 nuclear power plants. Source: screenshot by The New York Times



“The man of Dulking Pass” – 1850s illustration











© A child at the Agbogbloshie electronic waste dump in Ghana. Photograph: Andrew McConnell/UKiary





Een datacenter van Google in Middenmeer.

THE INTERNET USES A HUGE AMOUNT OF ENERGY. THIS IS DUE TO TWO KEY FACTORS:

MANUFACTURING AND SHIPPING	POWERING AND COOLING
 <p>Technology companies must manufacture and ship the internet's hardware including:</p>	 <p>Computers and servers must be powered and cooled. Drawing electricity from fossil fuels.</p> <p>This power is generated in different ways with varying emissions:</p>
 Laptops  Smartphones  Servers	 COAL  NUCLEAR  RENEWABLES

Nature is Fighting Back



- impact on the the operations of Internet infrastructure:
- **Sea-level rise & storms: flooding of data centers**
 - <https://labs.ripe.net/author/ggm/surviving-the-flood-how-data-centres-and-the-internet-must-face-climate-change/>
- **... Forest fires** <https://www.akcp.com/blog/data-centers-coping-with-climate-change-induced-wildfires/>
- **Water (un)availability for cooling power-plants & data centers:**
 - <https://www.datacenterdynamics.com/en/opinions/why-data-centers-need-to-talk-about-water/>
- **Energy over-consumption leads to (un)availability**
 - <https://www.consultancy.uk/news/28772/10-ways-businesses-can-reduce-their-digital-carbon-footprint>
 - ... taking water, land & energy **away** from local (human/plant/animal) population

Animals Winning the Cyber War ;)

- https://wiki.techinc.nl/Hackers_tribes#Other_animals_against_Technology





Give Attention to Environmental Sustainability

History of RIPE & Green Tech



GHG	Water
63%	83%
22%	9%
15%	7%

To Green the Internet, We Need RIPE

Michael Oghia · 29 Jun 2020

If Europe is going to realise its vision for a greener ICT ecosystem and a sustainable future, support from the RIPE community is imperative. But what can you do - as a network operator and as a user - to work towards a sustainable internet?

sustainability policy community



What Do We Do With E-Waste?

Mirjam Kühne · 9 Nov 2018

The headlines are raising awareness about the plastic soup that's clogging up our oceans but there's another problem much closer to home for much of the RIPE community: e-waste (aka 'dead electronics'). E-waste is a massive contributor to environmental pollution globally. We want to keep the conver...

sustainability community



Sustainability is Good for the Internet (and Business too)

Michael Oghia · 23 Jun 2017

In recent weeks, I've attended two events, SEE 6, hosted by the RIPE NCC in Budva, Montenegro, and the 10th European Dialogue on Internet Governance (EuroDIG) in Tallinn, Estonia. At both events, I had the opportunity to speak about the issue of sustainable access to the Internet.

sustainability governance



- **RIPE81 (October 2020): Sustainable ICT Procurement**

- Michael Oghia, Independent Community Member

- <https://ripe81.ripe.net/programme/meeting-plan/bof/#mon14>

- **RIPE84 (May 2022): Towards a Fossil Free Internet**

- Chris Adams, Green Web Foundation

- <https://ripe84.ripe.net/archives/video/751/>

- **My RIPE Labs series on Resilience**

- [Layer 9](#) and [Layer 6](#) articles

RIPE-adjacent Communities & Green Tech



- **IETF (Internet Engineering Task Force) / IRTF (Research)**

- <https://www.ietf.org/blog/towards-a-net-zero-ietf/>
- <https://datatracker.ietf.org/doc/html/draft-cx-green-ps-00>
- <https://datatracker.ietf.org/doc/draft-eckert-ietf-and-energy-overview/>
- <https://datatracker.ietf.org/doc/slides-113-gaia-the-internet-and-environmental-sustainability-revolutionary/>
- <https://datatracker.ietf.org/doc/draft-nottingham-avoiding-internet-centralization/>

- **2021: GreenTech Events Every Month!**

- <https://labs.ripe.net/author/becha/green-tech-2021-compilation/>

13 Propositions on an Internet for a "Burning World"

Tobias Fiebig
Max-Planck-Institut für Informatik

Doris Aschenbrenner
Aalen University

APNIC 2022:

<https://youtu.be/x5HwbtgBEEQ?t=3710>



<https://media.ccc.de/v/mch2022-278-m-a-y-will-contain-climate-change>



APC 2020: <https://www.apc.org/en/project/technology-environmental-justice-and-sustainability>

CCC 2019
<https://labs.ripe.net/author/becha/reporting-back-from-36c3-resource-exhaustion/>





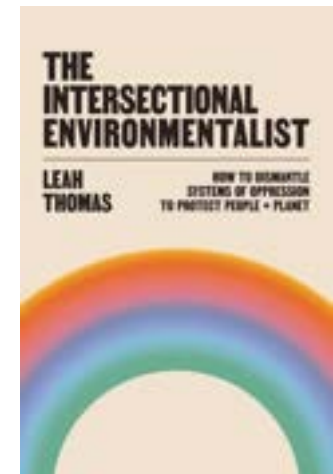
Join Green Internet Events This Year

- **16.9. SDIA & Dutch Tech, Amsterdam**
 - [measuring the environmental impact of digital products and applications \(link\)](#)
- **22-23.9. SDIA, Berlin or online: hackathon**
 - <https://labs.ripe.net/author/max-schulze/competition-environmental-impact-of-open-source-23-september-2022/>
- **1-2.10. Bits&Bäume, Berlin: Digitalization and Sustainability**
<https://bits-und-baeume.org/konferenz/en>
- **5.12. IAB Workshop, online** <https://www.iab.org/activities/workshops/e-impact/>
- **27-31.12. CCC/37c3, Hamburg&online:** events.ccc.de

Hopeful Directions Towards Planet-Friendly Internet



- Decolonising The Internet
- Feminist Internet / Data Feminism
- Community-owned & community-run networks (e.g. GAIA)
- “Right To Repair” Movement
- Permacomputing
- “Computing Within Limits”
- Low-Tech, Slow-Tech, Retro-Tech
- Intersectional Environmentalism
- Extinction Rebellion, Scientists Rebellion, Mothers Rebellion





Rebel for Life!



**extinction
rebellion**



Additional Links



- <https://labs.ripe.net/author/becha/ripe-community-resilience-economy-of-care/>
- <https://labs.ripe.net/author/becha/data-feminism-from-data-ethics-to-data-justice/>
- <https://labs.ripe.net/author/becha/computing-within-limits-2022-event-wrap/>
- <https://labs.ripe.net/author/becha/ripe-community-resilience-every-society-has-the-internet-they-deserve/>
- <https://labs.ripe.net/author/becha/ripe-community-resilience-nature-is-healing/>
- <https://irtf.org/gaia>
- https://wiki.techinc.nl/Hackers_tribes#Other_animals_against_Technology
- https://en.m.wikipedia.org/wiki/Jevons_paradox
- <https://UnCiv.nl>