

# Q-Qi: Quantum Charge Teleportation for continuous Q charging.

---

Dr Bheemaiah, Anil Kumar, A.B Seattle W.A 98125  
miyawaki@yopmail.com

---

## *Abstract:*

*Q-Qi is defined as a form of Qi, which is based on quantum teleportation of charge. A charge pump based macroscopic quantum tunneling device for energy teleportation from a micro grid is described for use with the quantum tablet designed for the e-paper version of the one quantum tablet per child. The promise of inexpensive e-paper is possible only with the quantum internet to the cloud and the use of teleported power, for true mobility and Q-Qi charging..*

*In this paper the author compares, many opposing theories of electron mobility and teleportation, quantum teleportation is compared to macroscopic quantum tunneling and the creation of charge flow conduits.*

*A comparison with current based storage and superconducting qubits, SMES systems (“Website” n.d.), supercapacitance is compared with superconducting loops with Josephson junctions and room temperature SQUIDs, described in an accompanying paper for another approach to qubits and Q-Qi.*

*Keywords: Conduits, Quantum Teleportation, Quantum Tunneling, e-paper, energy teleportation, One Quantum Tablet Per Child, Q-Qi, SuperCapacitors, Graphene, SMES, Hall Effect, Josephson Junction, SQUID.*

## What:

Q-Qi is defined as the quantum teleportation of manifest and unmanifest Qi charge, the induction principle of wireless charging. We define arbitrary distance coherence in quantum teleportation of charge in a design analogous to DC to DC converters with charge pump designs.

## How:

The wave function for electron flow, in entanglement, is defined as a wave function in charge - wave duality, in the existence of a sea of electrons and any barrier between them, tunneling or quantum movement of charge has been proven. We define a super capacitor for charge storage and a charge pump for DC to DC conversion, over arbitrary distances with a quantum coherence. (Monroe 2004)

An opposite approach with electron-hole recombination and state teleportation for charge creation is well described in literature. (Beenakker and Kindermann 2004)(Beenakker and Kindermann 2004; Beenakker et al. 2003)(Beenakker and Kindermann 2004; “Teleportation of Electricity” n.d.)

Macroscopic Quantum Tunneling is also defined with a finite probability of an electron tunneling over macroscopic distances, (“[No Title]” n.d.), in an adaptation of classical dynamical theory of Hamiltonian functions and stability energy dynamics, a wave approach to energy stability over macroscopic distances is described for a tunneling phenomenon.

Why:

The quantum energy device is a power source for the quantum tablet, not necessitating the need for charging the device, with very low power levels maintained by quantum teleportation of charge, in a super capacitor.

There are two approaches to materialization, the male principle is defined as one of minimalism, where a display is optronic in interactive manifolds and a force field, converting design to manifestation, the female principle is defined as materialistic, of stock keeping, including 3D printing, fabrication, marketing and transport. Hence all fabrication is treated as a female endeavor.

---

*Philosophy:*

*“Qi is a form of the Jedi Force on Earth, the light and the ‘Good’ in you. If heliocentric view points are valid, there is the search for the indigenous in you, of one or many round earths, orbiting a star called Helios or Sun. A place in the Galaxy, the Milky way. The Jedi is true here, space is right here on Earth, the force is Qi itself. The indigenous self is not just Earth, the five elements, but space too. May the Force be with you.”*



Fig 1: Media accompanying this publication, SuperGirl Kara Danvers shown with other journalists, reporting Q-Qi.

---

Summary:

Main Points:

Macroscopic Quantum Tunneling for Q-Qi.

Energy formulation in  $\psi(x,t)$  of stability in  $p(\psi,x) > 0$ , for  $\langle \psi(x,t) \rangle$  as an observable defined in  $[E, E'] = \hbar/2\pi$

Many Place Theory for Q-Qi.

Wave collapse as a simultaneous observability at least  $x, x'$ , where  $x$  is distinct from  $x'$ . This is defined as the cloning or indistinguishability in causal phenomenon as mobility.

Conduit Theory for Q-Qi.

There exists a  $P'$  of computability in the existence of a conduit in a computational universe of field theory, this  $P'$  is defined in field computation as manifestation of charge, a mobility of charge over a quantum tunnel, over macroscopic distances.

Quantum Teleportation of non Q-Qi charge reconstruction in free electrons..

Entanglement theory by EPR, of the states of systems, in electron-hole dynamics, the entanglement of  $\psi(x,t)$  and  $\psi'(x,t)$  of electron, hole dynamics, leads in coherence to a quantum teleportation of a  $\psi''(x,t)$  for a mobile electron in a fermi sea, as charge teleportation.

Applications:

Power teleportation for mobility, without the need for Qi chargers.

## Introduction.

### Problem Definition.

Defining a coherence in a two part charge pump DC to DC converter, with one charge pump, attached to a graphene supercapacitor and the other attached to a microgrid.

Coherence is defined in charge transport, over a quantum loop defined as a loop antennae in quantum scale, a circular circuit with quantized charge.

### Background.

SMES(“Website” n.d.) is a superconducting qubit (“Website” n.d.; Larsen et al. 2015; Leijnse and Flensberg 2013)and inductor based

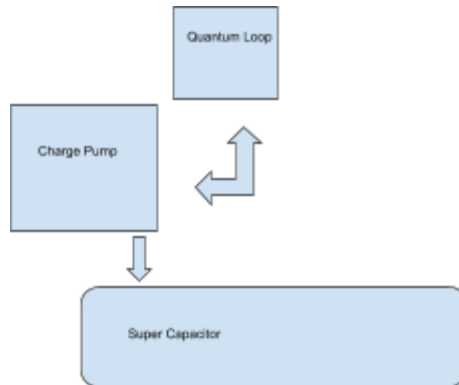
approach to stable power storage as opposed to super capacitors.

Superconducting qubits lend themselves to micro-caches of power based on the miniaturisation of SMES with room temperature superconductors.(Schwartz, Burkhardt, and Taylor 1996) With the easy availability of liquid nitrogen, refrigeration for low cost superconducting quantum cloud solutions is also viable and already in production.

In this paper, we use a charge teleportation and Supercapacitor based charge bank approach for power caching.(Oliveira, de Oliveira, and de Oliveira 2019)

<original-contribution>

## Formal Definitions:



We define a **quantum loop** as a quantized antennae or loop as a circuit with the mechanisms of coherence in ‘tunneling’.

With two approaches to quantum teleportation, one of tunneling over macroscopic distances and another of action at a distance or state transfer mechanisms also called entanglement. In the first case material, observable as a resonance actually tunnels across macroscopic distances as energy dynamics with a finite positive probability of wave collapse and observability. This generalizes to many place observability problem of tunneling, this is opposed to a ‘conduit’ theory of non local flow.

Quantum teleportation, however create charge, at a distance by the reconstruction of a state of charge

## Macroscopic Quantum Tunneling.

Energy formulation in  $\psi(x,t)$  of stability in  $p(\psi,x) > 0$ , for  $\langle \psi(x,t) \rangle$  as an observable defined in  $[E, E'] = \hbar/2\pi$  (Alcala, Glick, and Carr 2017; Chudnovsky and Tejada, n.d.; “Macroscopic Quantum Tunneling May Be Possible” 2011; D. V. Averin and Nazarov 1992; Murphy 2017; Dmitri V. Averin, Ruggiero, and Silvestrini 2012)

## Many Place Theory of Quantum Superposition.

Wave collapse as a simultaneous observability at least  $x, x'$ , where  $x$  is distinct from  $x'$ . This is defined as the cloning or indistinguishability in causal phenomenon as mobility. (“Atoms Can Be in Two Places at the Same Time” n.d.) (Contributors to Wikimedia projects 2002) (“Atoms Can Be in Two Places at the Same Time” n.d.; Bennett 2015)

## Conduit Theory of Minkowski Spaces.

There exists a  $P'$  of computability in the existence of a conduit in a computational universe of field theory, this  $P'$  is defined in field computation as manifestation of charge, a mobility of charge over a quantum tunnel, over macroscopic distances. ([Website](#)).

## Quantum Teleportation.

Entanglement theory by EPR, of the states of systems, in electron-hole dynamics, the entanglement of  $\psi(x,t)$  and  $\psi'(x,t)$  of electron, hole dynamics, leads in coherence to a quantum teleportation of a  $\psi''(x,t)$  for a mobile electron in a fermi sea, as charge teleportation.

Charge pump based DC to DC converters are commercially available for DC to DC upconversion, (“[No Title]” n.d.; Bendaud, Krit, and Elmaimouni 2018; Spiazzi, Marconi, and Bevilacqua 2016; Korshunov, Volobuev, and Lyubchik 2018; Hinov and Arnaudov 2018; Van Breussegem and Steyaert 2012; Ma and Bondade 2012) in lieu of transformer based induction. In this paper the author proposes the extension of these converters to macroscopic quantum tunneling through quantum loop circuits, for charge tunneling or teleportation. A

connected super capacitor is used as a cache for the electrical power to power the load.

</original-contribution>

## Discussion.

## Future Work.

Fabrication in organic electronics at a quantum scale is on the horizon, for quantum electronics, the promise of e-paper draws near with the possibility of spintronic memory, quantum displays, energy teleportation and quantum internet. Classical SoC MCU's along with quantum and classical GPU's can be printed on e-paper. Making flexible electronics a reality. This is the future of e-paper and cloud computing.

At the least an inexpensive e-ink based e-paper like Amazon Kindle is envisioned to not need charging with energy teleportation and always connected to the cloud through quantum internet.

## References.

- Alcala, Diego A., Joseph A. Glick, and Lincoln D. Carr. 2017. "Entangled Dynamics in Macroscopic Quantum Tunneling of Bose-Einstein Condensates." *Physical Review Letters* 118 (21): 210403.
- "Atoms Can Be in Two Places at the Same Time." n.d. Accessed September 22, 2019. <https://m.phys.org/news/2015-01-atoms.html>.
- Averin, Dmitri V., Berardo Ruggiero, and Paolo Silvestrini. 2012. *Macroscopic Quantum Coherence and Quantum Computing*. Springer Science & Business Media.
- Averin, D. V., and Yu V. Nazarov. 1992. "Macroscopic Quantum Tunneling of Charge and Co-Tunneling." *NATO ASI Series*. <https://doi.org/10.1007/978-1-4757-2166-9>

- \_6.
- Beenakker, C. W. J., C. Emary, M. Kindermann, and J. L. van Velsen. 2003. "Proposal for Production and Detection of Entangled Electron-Hole Pairs in a Degenerate Electron Gas." *Physical Review Letters* 91 (14): 147901.
- Beenakker, C. W. J., and M. Kindermann. 2004. "Quantum Teleportation by Particle-Hole Annihilation in the Fermi Sea." *Physical Review Letters* 92 (5): 056801.
- Bendaud, Kaoutar, Salah-Ddine Krit, and Lahoucine Elmaimouni. 2018. "DC-DC Power Converters & Charge Pump Circuits Converters for Battery Operated System." *Proceedings of the Fourth International Conference on Engineering & MIS 2018 - ICEMIS '18*. <https://doi.org/10.1145/3234698.3234702>.
- Bennett, Jay. 2015. "Atoms Exist in Two Places Nearly 2 Feet Apart Simultaneously." *Popular Mechanics*. Popular Mechanics. December 28, 2015. <https://www.popularmechanics.com/science/a18756/atoms-exist-two-places-simultaneously/>.
- Chudnovsky, Eugene M., and Javier Tejada. n.d. "Tunneling on a Macroscopic Scale." *Macroscopic Quantum Tunneling of the Magnetic Moment*. <https://doi.org/10.1017/cbo9780511524219.003>.
- Contributors to Wikimedia projects. 2002. "Quantum Superposition - Wikipedia." Wikimedia Foundation, Inc. September 9, 2002. [https://en.wikipedia.org/wiki/Quantum\\_superposition](https://en.wikipedia.org/wiki/Quantum_superposition).
- Hinov, Nikolay, and Dimitar Arnaudov. 2018. "Model Based Design of a Basic DC-DC Converters." <https://doi.org/10.1063/1.5082144>.
- Korshunov, A. V., P. S. Volobuev, and K. S. Lyubchik. 2018. "Charge Pump DC-DC Converters for Low-Power Reconfigurable Systems." *2018 International Conference on Actual Problems of Electron Devices Engineering (APEDE)*.

- <https://doi.org/10.1109/apede.2018.8542442>.
- Larsen, T. W., K. D. Petersson, F. Kuemmeth, T. S. Jespersen, P. Krogstrup, J. Nygård, and C. M. Marcus. 2015. "Semiconductor-Nanowire-Based Superconducting Qubit." *Physical Review Letters* 115 (12): 127001.
- Leijnse, Martin, and Karsten Flensberg. 2013. "Coupling Spin Qubits via Superconductors." *Physical Review Letters* 111 (6): 060501.
- "Macroscopic Quantum Tunneling May Be Possible." 2011. *Physics Today*. <https://doi.org/10.1063/pt.5.025741>.
- Ma, Dongsheng, and Rajdeep Bondade. 2012. *Reconfigurable Switched-Capacitor Power Converters: Principles and Designs for Self-Powered Microsystems*. Springer Science & Business Media.
- Monroe, Don. 2004. "Focus: Beam Up an Electron." *Physics* 13 (February). <https://physics.aps.org/story/v13/st6>.
- Murphy, Andrew. 2017. *Macroscopic Quantum Tunneling in Superconducting Nanowire Devices*.
- "[No Title]." n.d. Accessed September 20, 2019. <https://pdfs.semanticscholar.org/9c01/bd85ccf51ca8807aa858b6298e5573773d37.pdf>.
- Oliveira, Mário César Albuquerque de, Mário César Albuquerque de Oliveira, and Helinando Pequeno de Oliveira. 2019. "Strategies for Development of High-Performance Graphene-Based Supercapacitor." *Current Graphene Science*. <https://doi.org/10.2174/2452273203666190612122535>.
- Schwartz, J., E. E. Burkhardt, and William R. Taylor. 1996. "Preliminary Investigation of Small Scale Superconducting Magnetic Energy Storage (SMES) Systems." <https://doi.org/10.21236/ada304985>.
- Spiazzi, G., S. Marconi, and A. Bevilacqua. 2016. "Step-Up DC-DC Converters Combining Basic Topologies with Charge Pump." *2016 IEEE 17th Workshop on Control and Modeling for Power Electronics (COMPEL)*. <https://doi.org/10.1109/compel.2016.7556691>.
- "Teleportation of Electricity." n.d. Accessed September 20, 2019. <https://www.lorentz.leidenuniv.nl/beenakkr/mesoscopics/topics/teleportation/teleportation.html>.
- Van Breussegem, Tom, and Michiel Steyaert. 2012. *CMOS Integrated Capacitive DC-DC Converters*. Springer Science & Business Media.
- "Website." n.d. Accessed September 22, 2019a. [https://en.wikipedia.org/wiki/Superconducting\\_magnetic\\_energy\\_storage](https://en.wikipedia.org/wiki/Superconducting_magnetic_energy_storage).
- . n.d. Accessed September 22, 2019b. [https://en.wikipedia.org/wiki/Superconducting\\_magnetic\\_energy\\_storage](https://en.wikipedia.org/wiki/Superconducting_magnetic_energy_storage).