General observations:

A comparison is made of the voltage across the conductor of a transmission tower, of electrical conductors in a room/building and one inside a cellular telephone.

The distance of a human standing below a transmission tower, the distance of a human in a room/inside a building and a conductor in the roof or wall and the one inside a cellular telephone to a user pressing it against the user's body is noted.

Reference is made to research conducted which proves the ill effects on humans who live near electrical transmission cables and towers.

A comparison of the cellular telephone case and the electrical transmission tower / cable case is made and the similarity therein highlighted.

Case 1: Electrical transmission tower:

Typical height of tower=15m
Voltage across the conductor=110KV (typical).
Ratio of voltage to distance to the base of the tower (where a human is standing) =110/15=7.33KV/m=**7.33V/mm**

Case 2: Cellular telephone:
Typical distance to user (assuming touching skin)=thickness of cover of cellular telephone=0.5mm
Voltage inside a cellular telephone=3.85V
Ratio of voltage to distance to the distance to a human pressing it against the user's body=3.85V/0.5mm=**7.7V/mm.**

Case 3: A room in a building (Faraday cage):

AC Line voltage: 230V or 110V.

230Volt/2m=230/2000=0.115V/mm.

110Volt/2m=110/2000=0.055V/mm

Conculsion: From the above, it is proven that the effect that a cellular telephone can have on a user and the cable used in a electrical transmission tower can have on a human standing below the same is equal. Also, it is shown that the effect of the electrical conductors in the roof or walls of a building is small compared to the other two considered.

In addition to the effect of EMF, the direct non-ionising radiation from cell phone towers, modems and handsets have also to be considered.

Comments on the study conducted by NTP:

The temperature sensor used in the study also is a wireless one.

The contribution due to this also needs to be considered.

Details of the implanted microchips to measure temperature:

The RFR expert from NTP provided the following information:

IPTT 300 (It was mentioned as IPPT 300 was the temperature sensor in NTP's reply email dated 27 March 2018, to my query) was the temperature sensor and DAS 707 was the temperature reader type.

More information is available at BMDS.com

During the talk, as an answer to a query from the audience, it was clarified by the speaker, that the frequency was 20KHz.

What is the bandwidth and what is the power?

Reason for the negative effect seen in part of the study:

An article in Nature (https://www.nature.com/articles/d41586-018-03916-9) mentions about mice used in experiments and results obtained thereupon (copy of article attached with this email).

Could this be a reason why part of the NTP study showed a negative effect?

References:

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3341445/
2. https://electricalnotes.wordpress.com/2012/02/17/effects-of-high-voltage-transmission-lines-on-humans-and-plants/

Public Comment:
Submitted by:
P.K. Mahesh, Bangalore, Karnataka, India.
Email: [redacted]