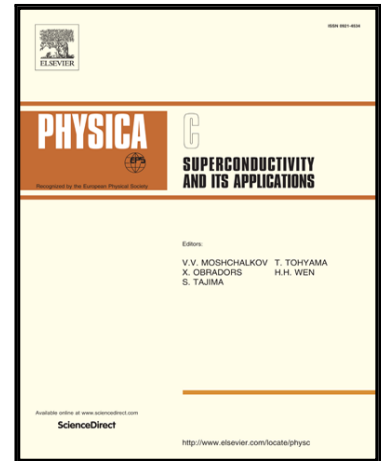


Accepted Manuscript

A Linear Induction Motor with a Coated Conductor Superconducting Secondary

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PII: S0921-4534(17)30532-4
DOI: [10.1016/j.physc.2018.04.002](https://doi.org/10.1016/j.physc.2018.04.002)
Reference: PHYSC 1253331



To appear in: *Physica C: Superconductivity and its applications*

Received date: 8 December 2017
Revised date: 3 April 2018
Accepted date: 5 April 2018

Please cite this article as: Xin Chen , Shijun Zheng , Jing Li , Guang Tong Ma , Fei Yen , A Linear Induction Motor with a Coated Conductor Superconducting Secondary, *Physica C: Superconductivity and its applications* (2018), doi: [10.1016/j.physc.2018.04.002](https://doi.org/10.1016/j.physc.2018.04.002)

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Highlights:

- As magnetic flux cut through a Type-II superconductor wound into a coil form, the supercurrent leads the voltage which yields a capacitive component; this cancels the impedance allowing for the associated Lorentz forces to be drastically increased.
- Employing coated conductor superconducting coils as the secondary of a linear induction motor, a breakout thrust of up to 4.7 kN/m^2 was recorded, a figure unobtainable by conventional copper-wound counterparts.
- The associated normal forces were also only a fraction of the breakout thrust and the ac losses half the value when compared to its copper wire equivalent rendering coated conductor superconducting coils more viable for use as linear drives such as in maglev propulsion and electromagnetic launchers.

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