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*Importantly this equation shows that the d-axis rotational emf is induced by the q-axis flux, while the q-axis rotational emf is induced by the d-axis flux. The plus and minus signs are a result of the assumed direction, and rotation, of the rotor axes and the fact that an induced emf must lag the flux which produces it by 90◦. (Machowski)*

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| **Kundur 3.64-3.69 (ось *q* опережает *d*)** |
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| **Kundur 3.70-3.72** |
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| **Kundur 3.50-3.52** |
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Kundur 3.75

*–* количество полюсов

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| **Kundur 3.127-3.133 (ось *q* опережает *d*)** | **Eurostag** |
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| **Kundur 3.120-3.122** | **Eurostag** |
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| **Kundur 3.123-3.125** | **Eurostag** |
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Kundur 3.75

*–* количество полюсов



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|  | (1) |
|  | (2) |
|  | (3) |
|  | (4) |
|  | (5) |
|  | (6) |
|  | (7) |
|  | (8) |
|  | (9) |
|  | (10) |
|  | (11) |
|  | (12) |

Исключим

(1) и (4) подставим в уравнения для (8) и (7)

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и выразим через переменные состояния ,и из уравнений (2) и (3)

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и выразим через переменные состояния ,и из уравнений (5) и (6)

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Выразим и через переменные состояния , , , , , из уравнений (7) и (8)

Kundur 4.32

Kundur 4.41

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Выразим токи и через переменные состояния из (7) и (8)

Выразим момент через переменные состояния (7,8)

Трансформация из dq в ri

Трансформация из ri в dq

Закон Ома в RI

И его преобразование в dq

Расчет постоянных времени замкнутого ротора и выполняется с использованием выражений [1]:

Определяются корни и уравнения