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Resolvents and Yosida approximations of displacement mappings of isometries

Maximally monotone operators are fundamental objects in modern optimization. We study in detail a nice class of monotone operators: displacement mappings of isometries of finite order. We derive explicit formulae for resolvents, Yosida approximations, and (set-valued and Moore-Penrose) inverses. We illustrate our results by considering rational rotators and circular shift operators.