Appendix
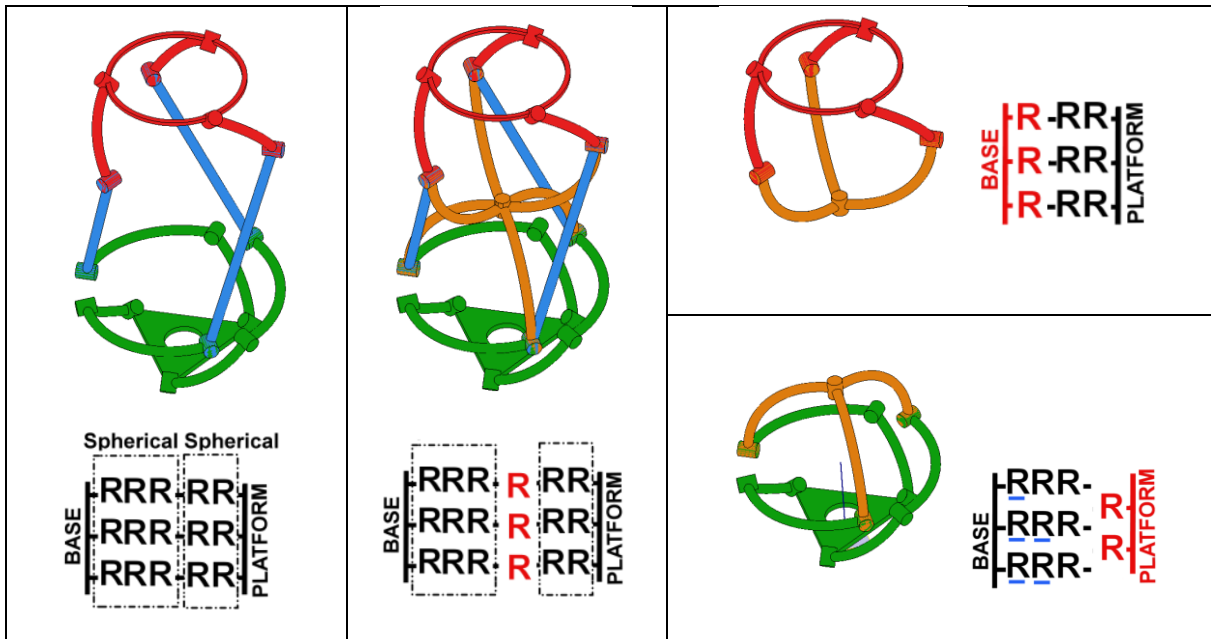

Figure A1. Decomposition method applied to 5 DoF λ=5 spherical-spherical subspace OPM. a) OPM, b) OPM with redundant imaginary joints, c) 3 DoF passive spherical manipulator, d) 5 DoF active spherical manipulator.
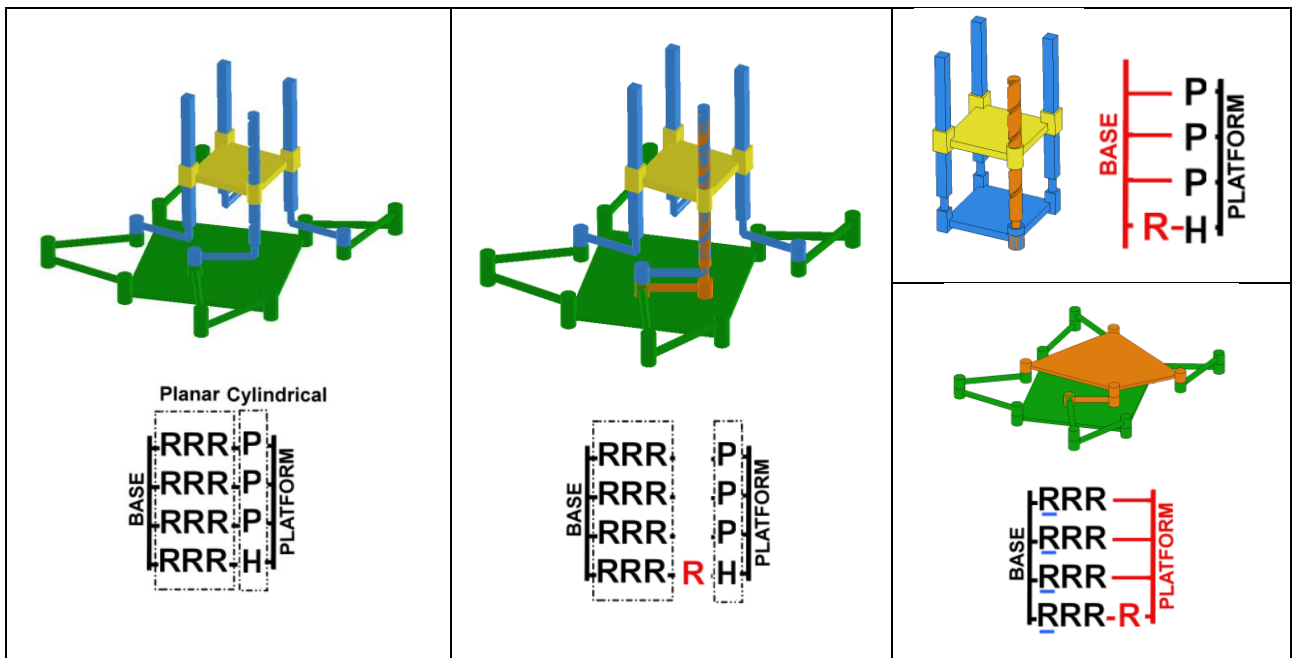

Figure A2. Decomposition method applied to 4 DoF λ=4 planar-cylindrical subspace OPM. a) OPM, b) OPM with redundant imaginary joints, c) 1 DoF passive cylindrical mechanism, d) 4 DoF active planar manipulator.
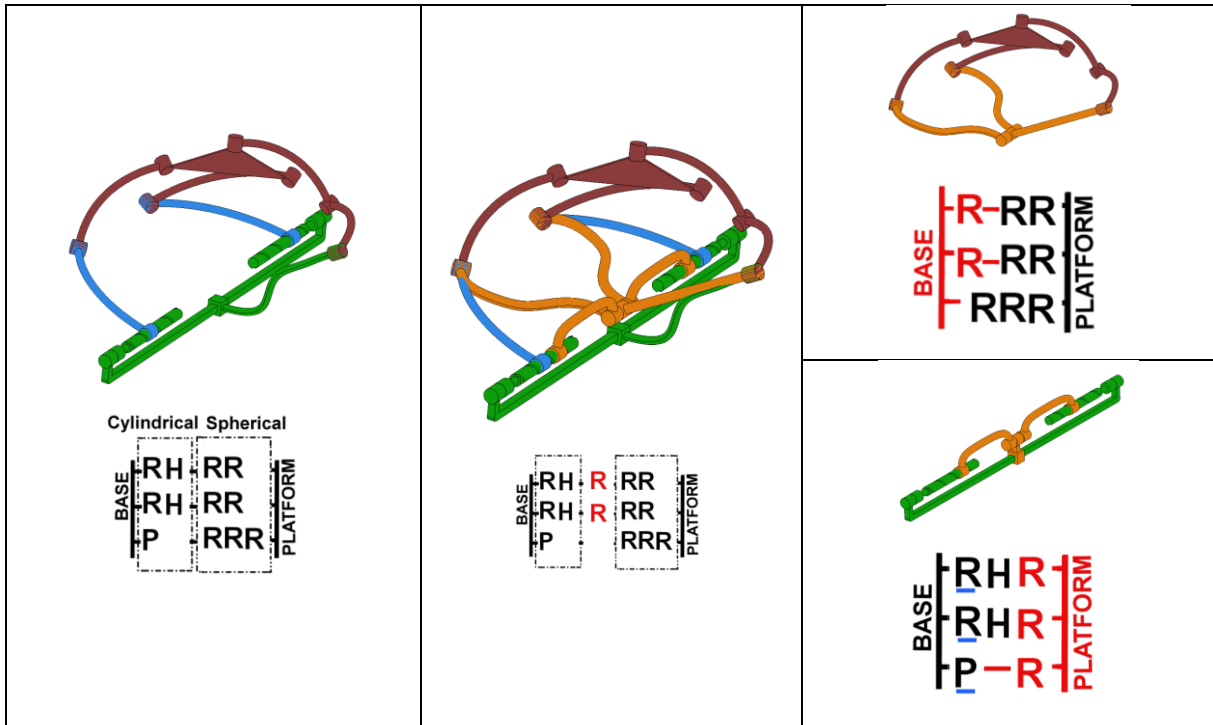
Figure A3. Decomposition method applied to 3 DoF λ=4 spherical-cylindrical subspace OPM. a) OPM, b) OPM with redundant imaginary joints, c) 2 DoF passive spherical mechanism, d) 3 DoF active cylindrical manipulator.
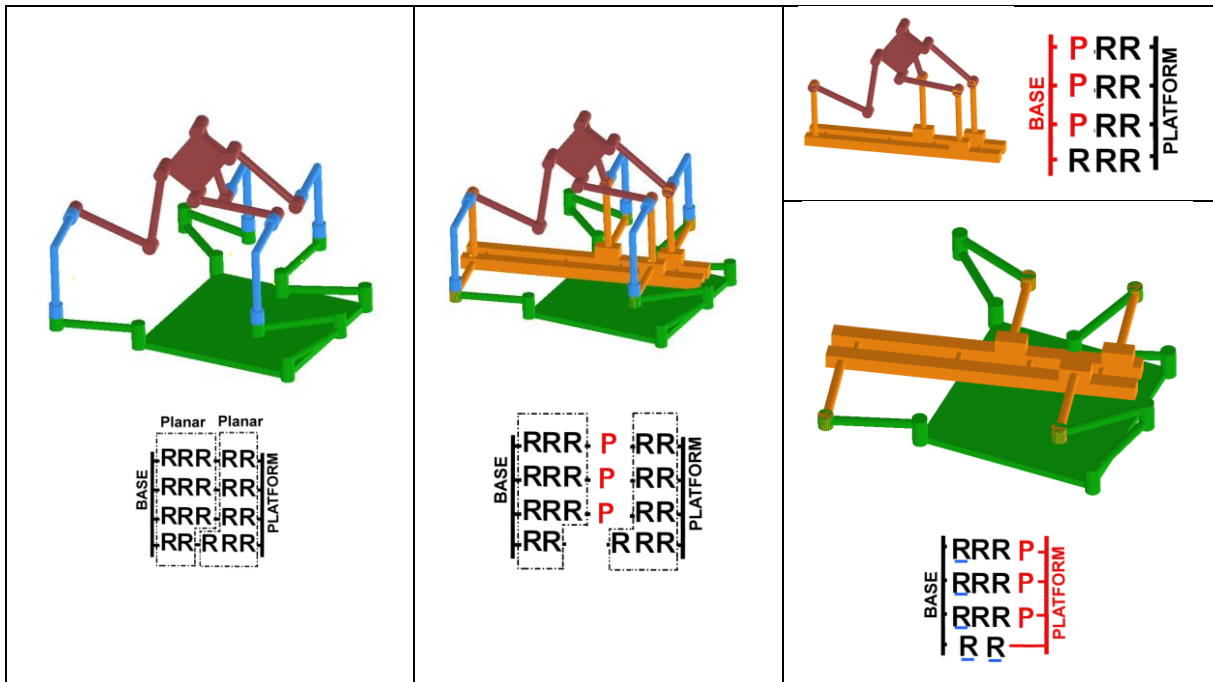

Figure A4. Decomposition method applied to 5 DoF λ=5 planar-planar subspace OPM. a) OPM, b) OPM with redundant imaginary joints, c) 3 DoF passive planar manipulator, d) 5 DoF active planar manipulator.