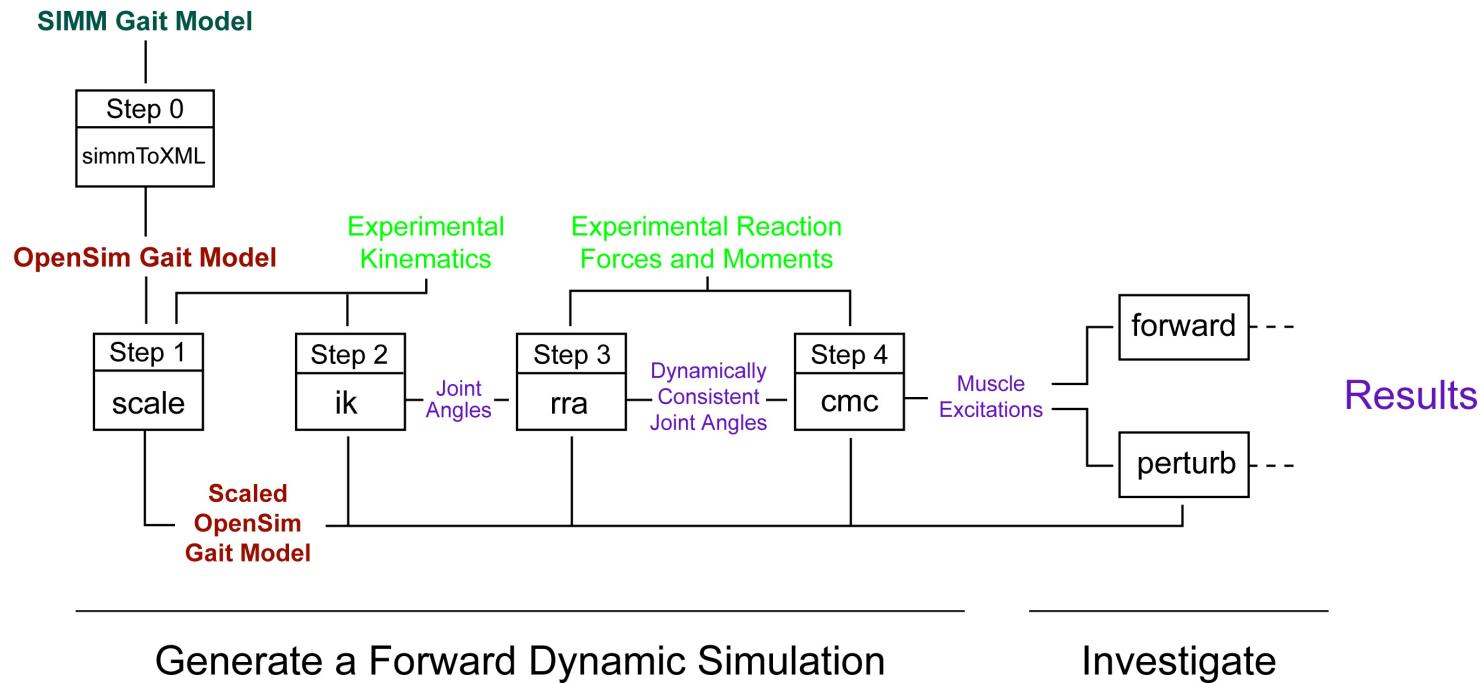




OpenSim Gait Workflow

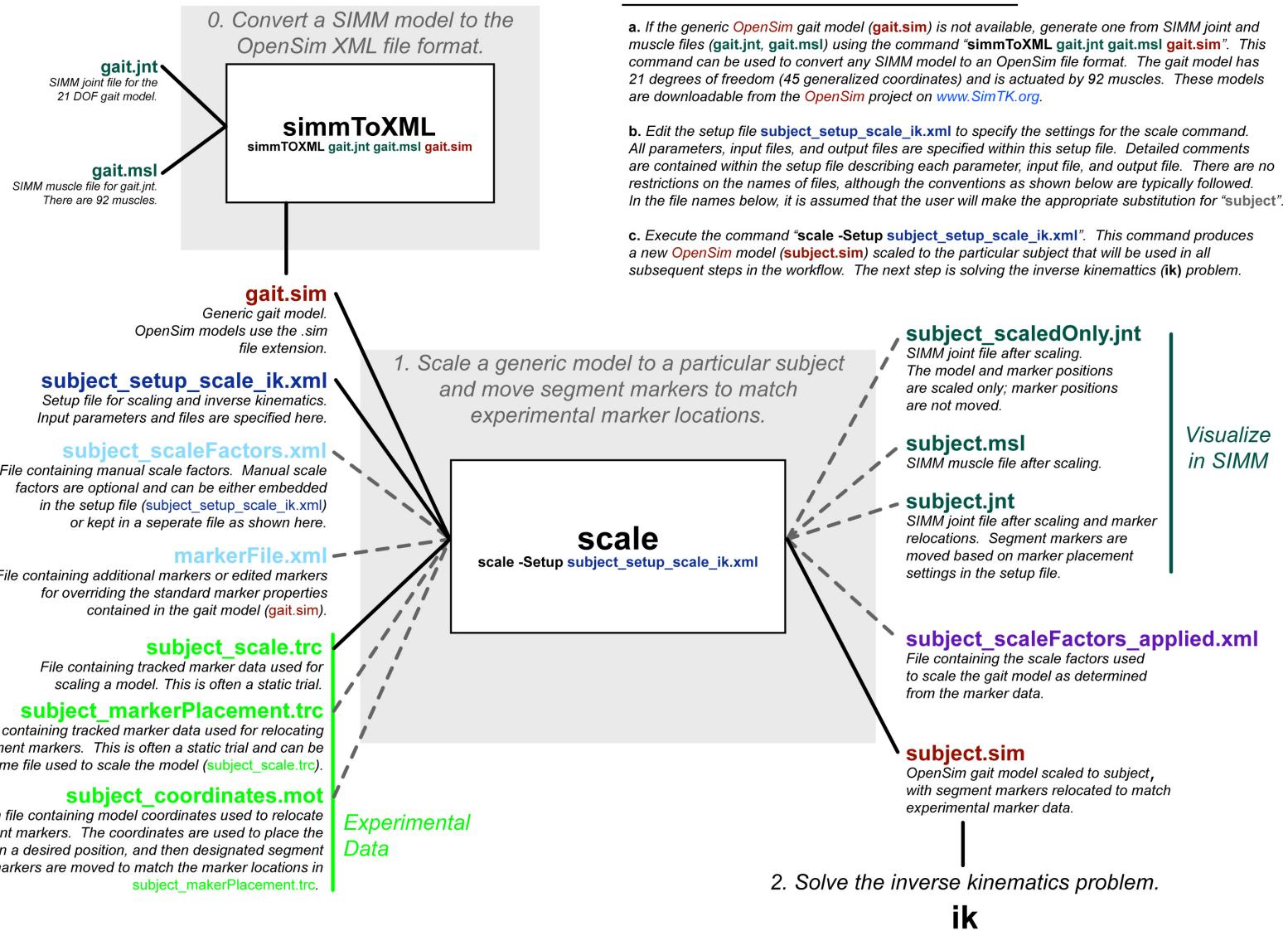


Key

dark green	SIMM joint and muscle files (*.jnt, *.msl).
light green	Experimental data (*.mot, *.trc, *.ana).
dark blue	Setup files in XML format (*.xml).
light blue	Additional user-configurable XML files, specified in setup files (*.xml).
red	OpenSim model (*.sim).
purple	Results (*.xml, *.mot, *.sto).
— — —	Required input and output.
— - -	Optional input and output.



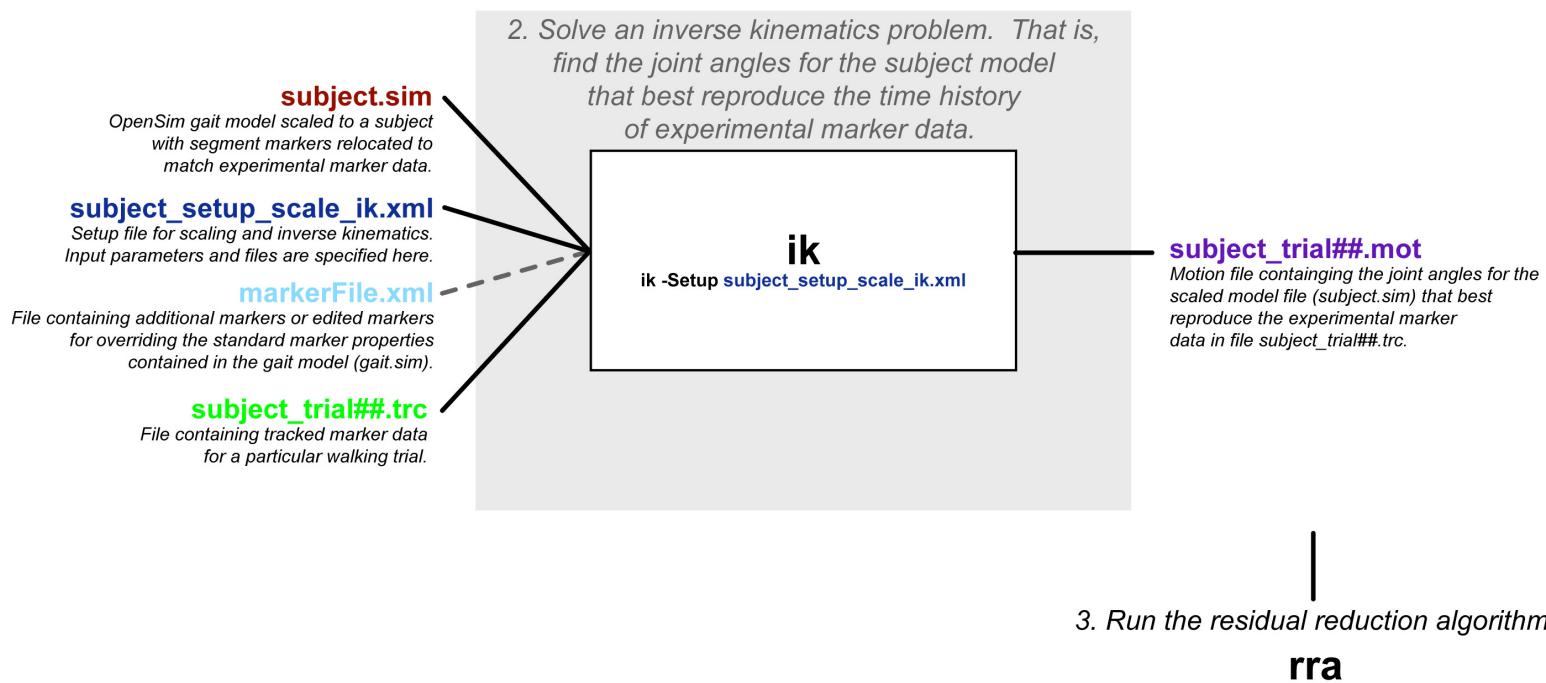
User Actions





User Actions

- a. Edit the setup file **subject_setup_scale_ik.xml** to specify the settings for the **ik** command. All parameters, input files, and output files are specified within this setup file. Detailed comments are contained within the setup file describing each parameter, input file, and output file. There are no restrictions on the names of files, although the conventions shown below are typically followed. In the file names below, it is assumed that the user will make the appropriate substitution for "subject" and "trial##".
- b. Execute the command "**ik -Setup subject_setup_scale_ik.xml**". This command generates a file containing the time histories of joint angles that best reproduce the experimental marker data. This file will be used in the subsequent residual reduction algorithm (**rra**) step.

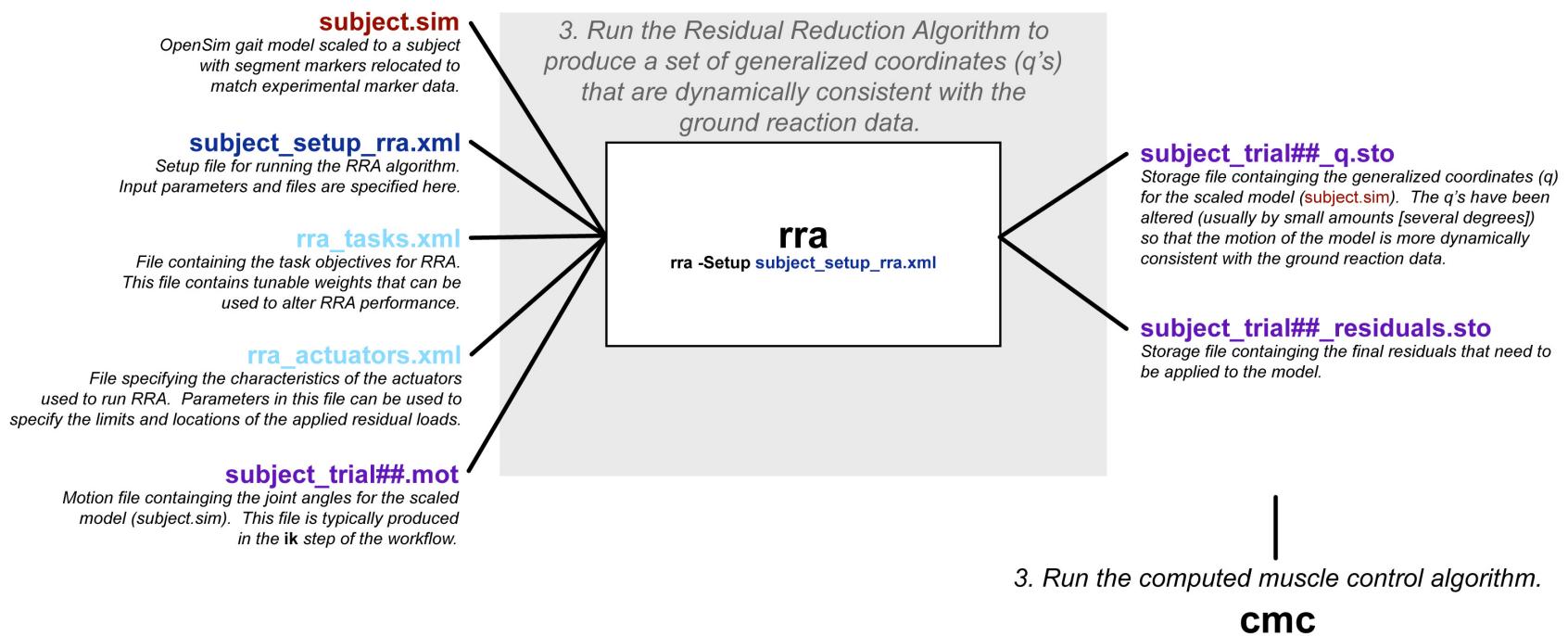




User Actions

a. Edit the setup file **subject_setup_ik.xml** to specify the settings for the **ik** command. All parameters, input files, and output files are specified within this setup file. Detailed comments are contained within the setup file describing each parameter, input file, and output file. There are no restrictions on the names of files, although the conventions shown below are typically followed. In the file names below, it is assumed that the user will make the appropriate substitution for "subject" and "trial##".

b. Execute the command "**rra -Setup subject_setup_ik.xml**". This command produces a file containing altered generalized coordinates (q 's) so that the motion of the model is more dynamically consistent with the ground reaction data (**subject_trial##_q.sto**). In general, it is not possible for RRA to eliminate residuals entirely. Therefore, the **rra** command produces an additional file containing the remaining residuals that need to be applied to the model (**subject_trial##_residuals.sto**). Both these files will be used in the subsequent computed muscle control (**cmc**) step.





User Actions

a. Edit the setup file **subject_setup_cmc.xml** to specify the settings for the **cmc** command. All parameters, input files, and output files are specified within this setup file. Detailed comments are contained within the setup file describing each parameter, input file, and output file. There are no restrictions on the names of files, although the conventions shown below are typically followed. In the file names below, it is assumed that the user will make the appropriate substitution for "subject" and "trial##".

b. Execute the command "**cmc -Setup subject_setup_cmc.xml**". This command produces a file containing the muscle excitations that will drive the scaled model (**subject.sim**) to track the specified generalized coordinates (**subject_trial##_q.sto**). The excitations are necessary to run the gait simulation and are necessary for most all investigations, including running forward simulations (**forward**) and perturbations (**perturb**).

